THE ECONOMY OF MUGHAL INDIA - A STATISTICAL STUDY

THESIS SUBMITTED FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

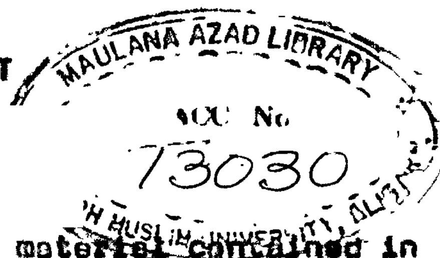
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ABSTRACT



The rich statistical material contained in the Āin-i Akbarī makes it possible (after supplementing it with other sources) to make an attempt at the reconstruction of Mughal-Indian economy, c.1600, in quantitative terms. But the study is beset with a number of difficulties. The first task is to establish the actual 'text' of the statistics in the Āin-i Akbarī, for which its manuscripts have to be carefully collated and figures interchecked. Outside the Āin, extensive exploration of sources has to be undertaken in order to obtain a comparatively limited and often very uneven quantities of statistical data.

The data seem to suggest that the extent of cultivation at the close of the 16th century was a little over half of that of c.1900, though the proportion varied from tract to tract. With an almost equivalent level of agricultural technology, except for the introduction of canal irrigation in certain regions, the yields as well as productivity was almost the same about 1600 as it was at the beginning of this century.

The Mughal administration laid claim upon about a half of the agricultural produce. The revenue-rates seemed to conform to this claim; but the Mughal ruling class had to concede

a substantial share to subordinate cosharers. The net amount of land-revenue realization was, therefore, less than 60% of the surplus extracted from the primary cultivators.

There were two major categories of the co-sharers: A part of the land-revenue was alienated through land grants (suyūrghāl). The proportion of the alienated revenue greatly varied from locality to locality; it however, did not exceed 8% of the jamaʿ in any suba. The grantees seem to have been town centred rather than rural in character.

Among the rural subordinate claimants the most prominent were the zamīndārs. The zamīndārs' share in Akbar's time was uneven, varying from locality to locality, but appears to have amounted on an average to about 20% of the claimed agricultural surplus.

The siphoned surplus reaching the Mughal administration went largely to meet the pay claims of Mughal military and civil officials - the so-called mansabdārs. About 82% of the jamaʿ was appropriated by this class.

Out of the remaining 18% of the jamaʿ, 4.59% (of the whole jamaʿ) was spent on the maintenance of the Imperial household and 8.8% on the Imperial military establishment.

The expropriated surplus was further diffused in ways

that created a large unproductive service sector; around 18% of the total *jamá* went to maintain a mass of lowly paid unproductively employed labour force. On the other hand approximately 39% was spent on goods and services that created (directly or indirectly) a demand for commodities embodying skilled labour.

The expenditure of the surplus by the ruling class sustained an urban population of a considerable size, estimated at about 15% of the total. Long-distance trade developed sufficiently, in addition, to sustain a number of towns which were essentially centres of manufacture and commerce, while others remained basically military camps or garrison-towns. The urban taxation contributed, on the whole, ~~are~~ one-tenth of the total *jamá*.

While the prices of agricultural produce relative to wheat fluctuated within a range of ± 20% between 1595 and 1861-70, those of manufactured commodities, such as sugar or cloth declined appreciably since 1595. However, the real urban wages, skilled as well as unskilled, also registered a sharp decline during the three centuries.

The gold and silver stock in India c.1600 was about one-tenth of the stock of bullion in the Old World. But India seems to have received subsequently a substantial share out of

the bullion influx from Spanish America. The coined stock increased by about 70% between 1606 and 1707. The effect of this increase in the bullion stock on prices was, however, moderate, proportionate to its magnitude as scaled down for increase in population (reflecting presumably a proportionate increase in GNP).

The varying kinds of statistics available for 1595 make it possible to estimate the population of around that year. The population of India at the time can be estimated at about 1450 millions. This suggests a rather low rate of population increase for the period 1600-1800, viz. 0.21%.

Preface

I try to present in this thesis in as closely criticized a form as I could achieve, the rich statistical material available for the beginning of the 17th century. I have sought to construct estimates for different sectors of the economy on the basis of the figures provided directly by our evidence combined with a certain amount of deduction and extrapolation. The result is admittedly uneven as to the degree of reliability. Nevertheless, where independent checks have been possible, particular estimates have been either confirmed, or, at any rate, found to be within the possible ranges in a surprisingly large number of cases. It has thus been found possible to give quantitative expositions of agricultural production, distribution of the surplus among various classes, price and wage structure and the population of India about 1600.

On the other hand, it has been found best not artificially to overstep the limits imposed on us by our material. For such important elements of the economy, therefore, as the value of production of extractive industries (e.g., salt, iron, etc.), the total value of services, and the volume of internal and external trade, no quantification has been attempted, because there is practically no basis direct or indirect in our sources. This has meant, among other things, that no estimate for GNP for Mughal India could be thought of.

From the data collected for c.1600, it is possible, with the limitations just mentioned, to have a fairly broad picture of the structure of Indian economy at the time. Unluckily, the size and quality of statistical information available for subsequent points of time during the 17th century is rather poor; and the economy cannot be examined in its process of movement as adequately as one would wish. However, wherever it is possible, the subsequent information has been used to trace tendencies to change in quantitative terms. Attention is particularly invited to Chapter XV.

I should like to record the many debts incurred by me in the course of working on my thesis.

My gratitude to my Supervisor is beyond the reach of expression and I should not, therefore, try to put it into words.

I owe much to Professor S. Nurul Hasan, who, by granting me appointment as Statistician (Research Assistant) in the Department of History over ten years ago, was responsible for changing my research interests from Mathematics to Economic history.

Mr Faiz Habib has drawn most of my maps, with professional competence under the direction of Mr Zahoor A. Khan, Cartographer of the Department; and I am thankful to both of them for bearing with patience my constant alterations and revisions.

I am indebted to Mr S.A.I. Tirmizi, Director, National Archives, for his gracious help and guidance at the National Archives, New Delhi. Dr A.K. Srivastav, Numismatic Officer, State Museum, Lucknow (presently Director, Mathura Museum) gave me very valuable help for obtaining access to the treasure-trove reports. He also very kindly let me consult his unpublished book.

Among my senior colleagues, Dr S.P. Gupta ungrudingly placed at my disposal his knowledge of the Rajasthani material; he also as ungrudingly let me consult the transcripts and microfilms he has of the various series of account papers and documents from the Rajasthan State Archives, Bikaner. Professor M. Athar Ali and Mr Iqtidar Alam Khan were always ready to discuss with me (and to often clarify) the various complexities of Mughal administration and political history, that I had to grapple with for understanding the precise significance of my texts on a number of occasions. I am also grateful to Mr A.J. Qaisar for his constant warnings against the possible misuses of statistics.

Members of the staff of the Research Library, Department of History, and of the Maulana Azad Library gave me cheerful assistance throughout, and I am deeply appreciative of the consideration that I have received from them.

The painstaking accuracy with which Mr A.A. Zaidi has typed the thesis has placed me under considerable obligation to him. Any textual errors that remain are not likely to be his.

ABBREVIATIONS

The following abbreviations have been employed in the footnotes and the Bibliography.

Agrarian System	Irfan Habib, Agrarian System of Mughal India, Bombay, 1963.
Āīn	Abul Fazl, Āīn-i Akbarī, ed. H. Blochmann, Bibliotheca Indica, Calcutta, 1867-77.
Atkinson	E.T. Atkinson, Statistical Descriptive and Historical Account of the N.W. Provinces of India, Allahabad, 1875.
Br. Mus.	British Museum (now British Library), London
'Chronicle'	Francisco Pelsaert, A Contemporary Dutch Chronicle of Mughal India, tr. Brij Narain and S.R. Sharma, Calcutta, 1957.
Factories	The English Factories in India & c. 1618-69, ed. W. Foster, 13 Vols. Oxford, 1906-27.
IESHR	Indian Economic and Social History Review, Delhi.
IHR	Indian Historical Review, Delhi.
I.O.	India Office Library (Commonwealth Relations Library), London.
JRAS	Journal of the Royal Asiatic Society, London.
JUPHS	Journal of the United Provinces Historical Society.
Mir'āt	'Ali Muhammad Khan, Mir'āt-i Ahmadī, ed. Nawab Ali, Baroda, 2 vols. & Supplement, Baroda, 1927-28 and 1930.
Nevill	H.R. Nevill, District Gazetteers of the United Provinces of Agra & Oudh, (separate vols. for individual districts), Allahabad.

<u>Proc. IHC</u>	<u>Proceedings Indian History Congress</u>, annual sessions.
'Remonstrantie'	Francisco Pelsaert, 'Remonstrantie', tr. W.H. Moreland and P. Geyl, <u>Jahangir's India</u>, Cambridge, 1925.
<u>Ṭabaqāt</u>	Nizāmuddīn Aḥmad, <u>Ṭabaqāt-i Akbarī</u>, 1593, Ed. B. De., Bib. Ind., Calcutta, 1913-35.
Watt	G. Watt, <u>The Dictionary of Economic Products of India</u>, 6 vols., London, 1889-93.

C O N T E N T S

M A P S

F I G U R E S

I N T R O D U C T I O N

Chapter I

THE STATISTICS AND THEIR SOURCES

I. THE Āīn-i Akbarī

The present thesis is an attempt to examine in quantitative terms the structure of the economy of the Mughal Empire about the close of the 16th century. That the attempt can be made at all is almost entirely due to the rich statistical data contained in Abul Fazl's Āīn-i Akbarī. The work is unique in a number of ways: Its author deals with aspects that for other historians did not merit even passing notice; he practically revels in offering us quantitative data, a trait strange for the period, and much the more unexpected in a writer of such majestic literary style; and, finally, the care he lavishes to ensure a correct transmission of figures shows that his interest in them was not forced or superficial. Any study that one attempts of his figures amounts at the same time to a grateful tribute to his vast endeavour.

The Āīn-i Akbarī is part of a large work that Abul Fazl undertook, upon the orders of Emperor Akbar.[1] The

1. Akbarnāma, I, p.9.

two volumes of his Akbarnāma record the events of the reign of that Emperor, preceded by an account of the reigns of Babur and Humayun, his grandfather and father. The third volume of what was ostensibly a single work, was devoted exclusively to record the "Ā'īnha-i Muqaddas-i Shāhī" (the Sacred Imperial Regulations)[1] is conveniently styled by a kind of readers' consensus as the Ā'īn-i Akbarī; and this has for all practical purposes a separate entity of its own. It has for its subject matter the organisation of Akbar's court, administration and army, the revenues and geography of his Empire, and the traditions and culture of the people he governed.

The Ā'īn-i Akbarī contains five books (daftars): the first three give a detailed description of the administration - 'the secular side of the Emperor'.[2] In the first book ('Manzilābādī'), Abul Fazl deals with the household; covering a wide range of aspects, from the treasury to the prices of various commodities, and from the regulations of the 'Animal Stables' to the management of the 'Building Establishment'. The second book ('Sipāh Ābādī') covers the military and civil administration and the establishments of servants. Along with the nobles (manṣabdārs), the learned men, poets, artists, physicians and others also find notice here.

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1. Ā'īn, I, p.256.
2. Ā'īn, I, p.255.

The third book (Mulkābādī) gives comprehensive information on the system of taxation, including detailed tables of revenue rates (dastūr'l'amal) followed by the 'Account of Twelve Ṣūbas' (provinces). The last has a separate chapter on each ṣūba, giving, in text, its geography and resources; this portion is followed, under each ṣūba, first, by statistical tables, and then by brief dynastic annals of the region. The statistical tables for each of the ṣūbas form a remarkable part of the work, providing us with statistical data on measured area, estimated revenue, revenue alienated through grants, zamīndārs' retainers (cavalry and foot) for each locality (pargana). Owing to the enormous significance of this portion of the Āīn for our thesis, the next section in this Chapter is reserved for a discussion of its figures.

The last two books deal with social life and the religions and culture of the Indian people.

In the conclusion to his work,[1] Abul Faẓl tells us of the way in which he collected the material for his work.

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1. Āīn, II, pp.245-257.

He claims to have based his information on the testimony of contemporaries and eye witnesses, without, however, uncritically accepting their evidence; he adds that he took enormous pains to analyse the voluminous information he thus collected from various sources. All the records of the State were put at his disposal. It seems that for the narrative history of the Akbarnāma, at least for the earlier years of the reign he had to rely upon oral evidence (or, at best, memoirs recorded for him).[1] But for the Āīn-i Akbarī he relied practically entirely upon state papers, and his statistical data were, naturally, supplied by government departments. But even here Abūl Fazl has not simply reproduced the official reports or documents; he has rearranged them, particularly replacing the officialese of the bureaucratic originals with text refashioned by his own polished style. He says that he revised the text five times and was indeed intending to undertake a sixth revision when the Emperor's insistence on getting the work completed, forced him to forego it.[2] Internal evidence suggests, as we shall presently see, that he made additions even after the last day of the 42nd regnal year (20 March 1598), which is the date of the formal conclusion of the work.[3]

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1. See Bāyazīd Bayāt's statements as to how his memoirs came to be written down for the use of Abūl Fazl (Tazkira-i Humāyūn-o Akbar, ed., Mr Hidayat Hosain, Calcutta, 1941, pp.1-2.).
2. Āīn, III, p.256.
3. Ibid., III, p.281.

In view of Abụ̉l Faẓl's assertions about precision and accuracy as well as the manifest imprint of his literary style that the text bears, it is difficult to accept Moreland's description of the Ā̓īn as a "hastily edited collection of official papers".[1] Moreland tends to assume that there is little genuine contribution from Abụ̉l Faẓl's pen, and he is equally sceptical about the accuracy of the Ā̓īn's figures.[2] He carries this view so far as at times to adopt an attitude of a rather convenient selectivity in using the Ā̓īn's statistics: If the evidence is not in tune with a theory of his, it is either suspect or is given an interpretation unsanctioned by the text.[3] However, the carefully logical arrangement of the material and Abụ̉l Faẓl's style should be sufficient to refute the charge of slovenly editing.

In actual fact, as noted at the beginning, Abụ̉l Faẓl takes extreme care in reproducing his figures. All the numbers are expressed in words, a system clearly adopted to minimize the chances of transcriptional errors, for which there is much greater chance in Arabic numerals as well as the raqam notation:

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1. W.H. Moreland, Agrarian System of Moslem India, p.81.
2. W.H. Moreland, 'The Agricultural Statistics of Akbar's Empire', JUPHS, II, pt. I, pp.8-9.
3. A prime illustration of this is Moreland's interpretation of the paragraph preceding the Dastūr'ul Ámals (cf. Irfan Habib, Agrarian System of Mughal India, p. 208 n.).

that the latter is eschewed, though it was the usual bureaucratic vehicle for conveying figures, is yet another proof of Abul Fazl's avoidance of mere reproduction of official papers.[1]

The period to which the different statistical data in the Āīn-i Akbarī belong is not usually indicated in the work, though there are important exceptions. One exception is offered by the '19-year rates' (Āīn-i Nauzdah Sāla), where the revenue rates for each regnal year are punctiliously given. Then, the jamaʿ statistics of the 'Twelve Sūbas', and the lists of the mansabdārs are both expressly assigned to the 40th Regnal Year.[2] On the strength of this ascription of two very important parts of its statistical material, it is perhaps a matter of convenience to treat 1595-6 as the year to which the Āīn's statistics may, in general, be assigned. But it is obvious that some information (apart from the 19-year rates) relates to a date earlier than this; and some to later years. One must, therefore, consider the limits of the period within which the information may be placed; and this can be done best by examining the evidence as to when (and, partly, how) the Āīn's materials were collected.

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1. The Arabic numerals used in Blochmann's printed text of the Āīn are not justified by the texts of the MSS.

2. The Regnal or Ilāhī year began with the Nauroz (falling on 20 or 21 March,) every year. The 40th Regnal Year thus began on 9 Rajab 1003 or 20 March 1959 (Akbarnāma, III, p.667).

In both the Akbarnāma and the Āʾīn-i Akbarī (which as we have seen, is nominally volume III of the former work), Abuʾl Fazl refers to an Imperial order issued to him to write ana account of the life and achievements of his sovereign. One MS of the Akbarnāma[1] mentions the dates of the two decrees to this effect the first being 22 Isfandārmurz, 33rd R.Y. (12 March, 1589) and the second Ardī Bihisht, 34 R.Y. (18 May, 1589). Elsewhere Abuʾl Fazl gives the last day of the 42nd R.Y. (20 March 1599), as the date of completion of the Āʾīn-i Akbarī. He adds that it took him seven years to complete the work, during which he prepared five drafts of the work.[2] Counting seven years from the stated date of completion of the Āʾīn, the work of compilation should have started by the end of 35th R.Y. (March 1591) and not the 33rd R.Y. But since, as we have seen, Abuʾl Fazl assigns two important portions of the Āʾīn (the list of the mansabdārs and the jamaʿ figures) to the 40th R.Y. (1595-6), indicating that this was the year in which the Āʾīn was in the main completed, the seven years may be counted back really from that year. In that case, the initial year for the work of compilation would be the 33rd R.Y., and since this

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1. H. Beveridge's introduction to his translation of the Akbarnāma, Vol. I, Calcutta, 1897, p.33; the MS cited is RAS 17.
2. Āʾīn, II, p.256.

would accord with the year in which the decrees for its compilation were issued, it would reinforce one's impression that in actual fact, as well as in Abul Fazl's own view, the bulk of the Āin had been completed by the end of the 40th R.Y.

Abul Fazl must obviously have begun by collecting information; and it is possible that much of this information was received by him prior to 1589. He says in the chapter 'Āin-i Abdārkhāna' that 'now a days Lahore is the capital'[1] (a fact true for the period, 1586-98);[2] but in another Chapter, the Āin-i ʿImārat, he refers to Fatehpur as the Imperial seat,[3] which suggests that this particular portion of the text (and the document on which it was based) had been prepared before 1586 (the year in which Fatehpur ceased to be the Capital).[4]

Other internal evidence suggests the use of information coming down from a date even before the initial year of compilation of the work. Abul Fazl assigns his jamaʿ-statistics to the 40th R.Y. (1595-6). But the total jamaʿ that he

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1. Āin, I, p.51.
2. Akbarnāma, III, pp.494 & 748.
3. Āin, I, p.168. It is significant that in the Akbarnāma Abul Fazl denies to Fatehpur Sikri the designation of Dāru'l Khilāfa when Lahore was the capital (Akbarnāma, III, 581); but he applies this designation to it when Akbar had left Lahore (ibid, 722).
4. Akbarnāma, III, p.494.

records (363 million dāms)[1] is less than the figure of 440 million dams given in the Tabaqāt-i Akbarī[2] which was completed in 1593. If we add Abul Fazl's own totals for the original 12 sūbas (except Kabul), the grand total comes to 422 million dāms. Quite obviously, in stating the total as 363 million dāms only, Abul Fazl has inadvertantly allowed the total for the Empire gathered from an earlier record to remain in his text. It has been suggested with some reason that the figure of 363 million dāms actually belonged to the year 1580-81, when the jamaʿ-i dahsāla was first established.[3]

Abul Fazl assigns the list of his mansabdārs to the 40th R.Y.;[4] but this list too seems to have been completed much earlier. It was already available to the author of the Tabaqāt-i Akbarī who had closed his work in 1593.[5] Even at that time the Āʾīn's list was perhaps partly out of date, since Nizāmuddīn Ahmad made quite a few additions and changes in the list. The Tabaqāt's list gives 15 names that are not mentioned

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1. Āʾīn, I, p.386.
2. Tabaqāt, III, p.546. Apparently by mistake, the Tabaqāt gives this figure in terms not of dāms but of tankas or double-dāms.
3. cf Irfan Habib, Agrarian System, p.399&n.
4. Āʾīn, I, p.222.
5. See the explicit acknowledgement in the Tabaqāt, II, p.425.

in the Āīn, while for 48 mansabdārs, the mansabs recorded in the Tabaqāt are higher than those given in the Āīn. Abūl Fazl does seem to have added some new names to his earlier list, partly at least to accommodate new appointments and promotions; but he seems to have failed to incorporate all the mansab promotions, given between the time of the original list and the 40th R.Y. No mansab granted after the 40th year is incorporated, although Abūl Fazl formally completed the work two years later.[1]

The 40th R.Y. seems to form the end-line for some other data. For example, it omits any reference to the revised schedule of the monthly barāwurdī rates, issued in the 40th R.Y. and duly recorded in the Akbarnāma.[2]

At other points, however, Abūl Fazl has definitely added material obtained much after the 40th R.Y. The three new sūbas, namely, Berar (annexed, 41 R.Y.); Khandesh (45 R.Y.); Ahmadnagar (45 R.Y.) make their appearance in his 'Account of the Twelve Sūbas', raising the total number of sūbas from 12 to 15. Yet the old heading, Āīn-i Ahwāl-i Doāzdah Sūba was

1. Cf. I. Habib, 'The Mansab System, 1595-1637', Proc. IHC, 1967.

2. Akbarnāma, III, 671-2. cf. I. Habib, 'Mansab System', op. cit.

retained (perhaps overlooked). In the notice of Khandesh (Dandesh) in the Āīn he himself mentions the 45th R.Y.(1600-1601 as the year in which the annexation occurred.[1] Not only were the accounts of these three ṣūbas inserted after the 45th R.Y., there are signs that additions were made elsewhere too in the 'Account of the Twelve Ṣūbas'. Malwa was one of the old twelve provinces; but in the text preceding its tables, Abul Faẓl refers to his own passage through the province in the 43rd R.Y., when he was on his way to Deccan.[2]

Additions of dates later than the 40th R.Y. occur elsewhere also. In the account of the camel stables Abul Faẓl records that in the 42nd R.Y. the allowance sanctioned for the camels' apparel was enhanced.[3] At another place, while describing the Imperial horse stables, he reports that the horses belonging to Prince Murad, after his death, were transferred to the Emperor's stables.[4] Since Prince Murad died in the 44th R.Y. (May 1599),[5] this Chapter was evidently revised after or

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1. Āīn, I, p.476. The fall of Asirgarh which may symbolise the final annexation of the Ahmadnagar kingdom took place in 45th R.Y. (1600-1601). (Akbarnāma, III, pp.780-81).

2. Āīn, I, p.455.

3. Ibid., I, p.145.

4. Ibid., I, p.148.

5. Akbarnāma, III, p.754.

during the 44th R.Y., and the revision is thus subsequent to even the formal date of the completion of the Āīn.

Notwithstanding the additions, it may safely be assumed, in view of the positive statements by Abūl Fazl himself (discussed above that the compilation of the Āīn was mainly carried out between 1588 and 1595-6. Since the collection of the information began in 1588, it is possible that the documents obtained then gave data for still earlier years. At the same time we may be justified in treating 1595-96 as the year after which very few statistics (besides those for the newly annexed ṣūbas) were admitted into the body of the work. It is, therefore, more than a convenient convention to take the Āīn's evidence as true for 1595-6. But the possibility that much of the statistical material relates to years prior to this has constantly to be borne in mind, and the context must throughout be considered for establishing whether this is actually so in respect of any particular sets of figures.

Though quite a few MSS of the Āīn survive, a new critical edition is greatly needed. Blochmann's text,[1] so far the standard edition and a product of considerable labour, was not unfortunately based on the best or earliest MSS and is not

1. 2 vols., Bib. Ind., Calcutta, 1867-77.

free from errors. His edition, therefore, needs, all the time, to be checked with the MSS. The other two editions (Saiyid Ahmad's edition, Delhi, 1855, and the Nawal Kishor edition, Lucknow, 1869) are in every respect inferior to Blochmann's edition. Saiyid Ahmad's edition is incomplete, with a defective text, while the Nawal Kishor edition is really a reprint of Blochmann's text with the addition of some errors. Blochmann also translated a portion designated by him as Vol. I (revised by Phillott, Calcutta, 1927 & 1939) while Jarrett translated the remaining portion (divided into Vols II and III). For serious research neither translation is of much use; Jarrett's translation, in particular, contains an unduly large number of inaccuracies, which even Sir Jadunath Sarkar in his revision (Calcutta, Vol. II, 1949, and III, 1948) leaves uncorrected.

The British Museum (now, the British Library) contains two very accurate 17th century MSS of the Āīn-i Akbarī (Add. 7652 and Add 6552).[1] In view of the inaccuracies in Blochmann's text and tables, I have collated the entire statistics (as well as text, wherever cited) in his edition with these two MSS. I have always preferred the figures which the two MSS agree upon, irrespective of whether they accord

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1. Microfilms in the Department of History Library, Aligarh.

with, or are different from those of Blochmann's edition. In case of disagreement in the MSS, I have checked with the Blochmann edition and generally accepted that reading of either of the MSS which is identical with Blochmann's text. Besides collation of this sort, I have tried to establish transcriptional errors in the revenue rates by hypothesizing a restated schedule of conversion of the original rates.[1] The problems of textual accuracy which the statistical tables of 'the Account of the Twelve Ṣūbas' pose, and the devices used to resolve them, require treatment at some length and are, therefore, discussed in the following section.

II. 'THE ACCOUNT OF THE TWELVE ṢŪBAS'

In the chapter headed 'Ahwāl-i Doāzdah ṣūba' ('Account of the Twelve Ṣūbas'), in Book-3 ('Mulkābādī') of the Āin-i Akbarī, Abul Faẓl offers detailed descriptions of the various ṣūbas (provinces) along with statistical information appended to the account of each and set out in a tabular form. The number of ṣūbas whose account he offers, is actually fifteen, and not twelve. This, as we have seen above, is due to

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1. See infra, Chapter IV.

subsequent insertion of the accounts of three provinces, Berar, Khandesh (Dandesh) and Ahmadnagar, which were formed upon annexations affected after the 40th regnal year (1595-6), the year to which, according to Abu'l Fazl himself, the information of the chapter relates.[1] For our quantitative study the major significance lies in the statistical tables which are remarkable for the vast amount of detailed information that they offer.

In the text immediately preceding the statistical tables of each sūba, Abu'l Fazl gives an account of the geography and economic features of the province. At the end of this account, he gives us the numbers of sarkārs and parganas (or mahals, the two terms being practically synonymous)[2] that formed the province; the total measured area (zamīn-i paimūda); the expected net revenue (jama'), and the amount alienated out of it, in 'charity' grants (suyūrghāl); the strength of the zamīndārs' troops (bumī) specifying the horsemen (sawār) and foot-soldiers (piyāda) separately, along with the number of

1. Āin, I, p.386.

2. Parganas are essentially territorial divisions; mahals essentially revenue-units. All parganas were mahals; but the word mahal was, in addition, applied to certain specified sources of revenue, such as port or market taxes. Thus there might be a pargana formed by a city and its environs; and, in addition, a mahal-i sāir comprising revenues from its markets. The word pargana is never applied to the latter unit.

elephants. The number of cannon pieces and boats (of zamīndārs) are given, but only under the ṣūbas of Bengal and Bihar.

After setting forth the totals for a province in this fashion at the end of his text, Abul Faẓl goes on to provide the tables of statistics for each of the sarkārs in the ṣūba. The tables consist of eight columns[1] bearing the headings (i) pargana/maḥal; (ii) qilaʿ (forts);[2] (iii) ārāzī (zamīn-i paimūda), measured area; (iv) naqdī (= jamaʿ), net revenue assessed in cash; (v) suyūrghal, revenue alienated through grants; (vi) zamīndār (caste/castes); (vii) sawār (horsemen of zamīndārs); (viii) piyāda (zamīndārs' foot-retainers). The number of elephants, wherever recorded, is given in the column for sawār. The first row of the table for each sarkār sets out the totals for the whole sarkār, the first column in this row giving the total number of parganas. From the second row downwards follow statistics for the individual parganas of the sarkār; the

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1. Blochmann, in his printed text, replaced the tabular form of representation by a continuous text, and in the process dropped the column headings. This defect and some of the misinterpretations it led to were first pointed out by Irfan Habib, 'Zamīndārs in the Āin-i Akbarī', Proceedings of Indian History Congress, 1958, pp.320-23.

2. Besides short descriptions of forts (specifying whether of brick or stone, for example), Abul Fazl sometimes enters incidental remarks here, referring, for example, to the situation of a place on a river or the existence of the mines in a locality.

intended arrangement of the parganas is alphabetical, but in practice this is true only to the extent that parganas are arranged by order of their initial letters.

In the statistics here, as elsewhere in the Āīn, Abūl Fazl puts the numbers in words throughout and avoids the use of Arabic numerals or of the raqam notation.[1]

The statistics which are presented with such care, nevertheless, exhibit an elementary flaw in that the totals as stated are not the same as the actual totals of the detailed figures. That is, the sum of the totals stated for the individual sarkārs in the tables of a ṣūba differ, in most cases, from the total stated for that ṣūba in the text; and the totals of figures given against the parganas under a sarkār often differ from the totals stated at the head of the same table.

Moreland was the first to notice these discrepancies, especially in regard to the figures of ārāzī and jama'. But he attributed all these variations to simple transcriptional and printing errors in Blochmann's edition.[2] A collation with

1. Such is the case in all MSS without exception; in Blochmann's text the words have been converted into Arabic numerals.

2. W.H. Moreland, 'The Agricultural Statistics of Akbar's Empire', JUPHS, Vol. II, part I, 1919, p.9.

the MSS, it is true, does reveal a number of inaccuracies in Blochmann's tables. I have made a careful collation of the two earliest and most accurate MSS,[1] and, as explained in the previous section, have usually accepted the reading which is common to both of the MSS. But in addition, in the statistics of the 'Account of the Twelve Ṣūbas', I have accepted the reading in the MSS or in Blochmann's text which brings the actual worked out total closer to the stated one. An illustration of how Blochmann's text can be corrected is offered by the following example: The ārāzī figures as given in Blochmann and in the MSS, for three sarkārs of Malwa are as follows:

Sarkār	Total stated in Blochmann	Total stated in MSS	Total calculated from parganas
Handia	89,573-11	2,89,573-15	2,89,573-15
Nadurbar	20,59,604	8,59,604	8,59,604
Kotri Priawa	1,90,039	1,92,839	1,92,821

The MS readings in all the three cases accord fully or fairly closely with the actual totals worked out from the pargana figures. Moreover, in the stated sarkār totals for

1. Br. Mus. Add. 7652, Add. 6552.

arāzī as given in the MSS add up to the total stated for the whole sūba. The figures in Blochmann's text are, therefore, certainly incorrect; and the source of error in at least the figures for two out of the three sarkārs, can easily be discerned: In the case of sarkār Handia, there is an obvious printing error; the digit 2 at the extreme left has been omitted; and in Nadurbar, the scribe appears to have misread bist (20) for hasht (8): (The source of Blochmann's error in the figure for Kotri Priawa is not easily discoverable). In this case, then, the MS readings must be accepted without reservation and the figures in Blochmann's text for all the three sarkārs corrected accordingly.

Such errors are unfortunately pretty numerous in Blochmann's edition; and I have attempted to detect and correct them throughout by a collation with the MSS in the manner illustrated above.

But in addition to the mistakes in Blochmann's text that can be eliminated through a critical comparison with the MSS, we come across errors in figures in the MSS themselves arising out of simple mistranscriptions in either the original or the earliest copies. For instance, the stated total of the jamaʿ for sarkār Munger in sūba Bihar in the MSS (as well as Blochmann) is 2,96,22,181 while the pargana figures add up to

10,96,22,981 dāms. Evidently the scribe misread the word do (two) for dah (ten), an error quite common in Persian. In sarkār Bhakkar, the stated ārāzī total is 2,82,013, while the actual is 10,82,013-15. Again the confusion between dah (10) and do (2) is forcefully borne upon us. Other similar common errors that cen be rectified by checking with actual totals are the misreadings of sih (3) for nuh (9); yāzdah (11) for pānzdah (15); sizdah (13) for hizdah (18); hasht (8) for bist (20) or shist (60); haftād (70) for hashtād (80); sih ṣad (300) for shash ṣad (600); and vice versa.

In additions to the errors arising out of misreadings of the number words, there are a small set of figures where there have been some obvious omissions or slips even in the earliest MSS. For instance, the suyūrghāl stated for Doāba Sindh Sagar of ṣūba Lahore is 4,680 while the actual total works out to 94,680. Now the sum of the stated sarkār figures falls exactly 90,000 short of the total recorded for the whole ṣūba. Here we have a clear case of the omission of the initial nawwad (90) in the words making up the sum for the Doāba. To take another instance: for the sarkār of Badaun, ṣūba Delhi, the stated area of ārāzī is 80,93,850 bīghas, and 10 biswas, while the ārāzī figures given for the pargana add up to 18,93,756 bīghas. The latter figure brings the total of the stated

figures for the sarkārs closer to the ṣūba total, since the total of the stated sarkār figures, with the stated sarkar total for Badaun is 3,47,96,495 bighas, 7 biswas; with the total for sarkār Badaun, replacing the stated, it is 2,85,96,401; the stated total ārāẓī for the ṣūba is 2,85,46,816 bīghas, 16 biswas. It seems obvious that in transcribing the sarkar total for Badaun, confusion occurred between hizdah (18) and hashtād (80); a slip not very usual owing to the different forms of the words in Persian writing; the slip perhaps arose at some stage when figures were being transferred by dictation, from one document to another.

By considering alternative readings for resolving such possible confusions, and restoring the few figures where omissions are obvious, a large number of differences between the stated and actual totals can be fully reconciled, or reduced to marginal variations.

We may now, claim to have the text of the tables as close as possible to the text as Abu'l Faẓl left it (or intended to leave it!) in his original copy. In the following Table I, I set out the differences between the stated total and actual totals which still remain after (i) collation of the edition with the MSS (where in the case of variants among MSS, I have accepted the reading which brings the total closer to

the stated); (ii) considering the alternative readings in the case of number-words which are prone to misreadings; and (iii) correcting the figures in case of obvious omissions and slips, I have ignored any difference between the stated and actual totals of less than ± 0.05% and have in all such cases considered the two to be identical. In all other cases, the differences are stated as per centages of the stated totals.

Table I

	Ārāzī	Naqdī	Suyūr-ghāl	Sawār	Piyāda
BIHAR					
Bihar	Nil	+0.8	Nil	-2.37	-39.5
Monghyr	,,	-0.1	-	-	-
Champaran	,,	Nil	-	-	-
Hajipur	,,	,,	-	-	-
Saran	,,	,,	-	-	-
Tirhut	,,	,,	-	-	-
Rohtas	,,	+0.14	-	-	-
ALLAHABAD					
Allahabad	Nil	Nil	Nil	Nil	-17.04
Ghazipur	,,	+2.2	-7.6	,,	Nil
Benaras	-1.4	Nil	Nil	,,	,,
Jaunpur	Nil	-0.7	-36.6	,,	,,
Manikpur	,,	Nil	Nil	,,	,,
Chunar	,,	,,	-0.4	-	-
Battha Ghora	-	-	-	-	-
Kalinjar	Nil	-0.1	+135.5	-33.1	Nil
Kora	,,	Nil	Nil	Nil	-11.49
Kara	+0.65	,,	-9.43	-5.1	-

AWADH					
Awadh	+0.1	Nil	Nil	Nil	-4.7
Gorakhpur	Nil	,,	,,	,,	Nil
Bahraich	,,	,,	,,	,,	,,
Khairabad	+0.05	,,	-2.26	,,	,,
Lucknow	-0.1	,,	+0.2	,,	-7.67
AGRA					
Agra	+0.8	+.8	-1.49	Nil	Nil
Kalpi	+4.78	+0.02	-1.8	,,	,,
Qanauj	Nil	Nil	+0.68	,,	
Kol	-0.1	,,	-3	,,	
Gawalior	Nil	,,	-24.6	,,	Nil
Earach	,,	-0.1	Nil	,,	,,
Payanwan	,,	Nil	,,	,,	,,
Narwar	,,	,,	,,	-	-
Mandlaer	,,	,,	,,	-	-
Alwar	-1.9	-0.12	,,	+1.42	+1.42
Tijara	-	Nil	,,	Nil	Nil
Narnaul	+0.6	,,	,,	,,	,,
Sahar	Nil	,,	,,	,,	,,
MALWA					
Ujjain	Nil	Nil	Nil	Nil	Nil
Raisen	-	,,	-	,,	,,
Garh	Nil	+0.5	-	-8.73	-20.03
Chanderi	,,	-0.9	Nil	Nil	- 3.25
Sarangpur	,,	Nil	Nil	,,	Nil
Bijagarh	,,	,,	-17.14	,,	-0.41
Mandu	+0.2	,,	Nil	-1.69	-6.47
Handia	Nil	-	,,	Nil	Nil
Nadurbar	,,	Nil	,,	-	-
Mandsor	-	,,	,,	Nil	Nil
Gurgaon	Nil	,,	-	-	-
Kotri Pirawa	,,	,,	-	Nil	Nil
BERAR					
Gavil		Nil	-12.43	Nil	Nil
Punar		,,	-	,,	,,
Kherla		,,	-	,,	+4.2
Narnala		+0.07	-4.11	,,	Nil
Kalam		Nil	-	-	-
Basin		,,	Nil	-	-
Mahur		,,	,,	-	-
Manikdurg		,,	-	-	-
Pathri		-0.5	-11.18	-	-
Telingana		+0.6	Nil	-	-
Ramgar		Nil	-	-	-
Mehkar		,,	Nil	-	-
Baitalwadi		-2.93	-	-	-

GUJARAT					
Ahmadabad	+4.9	+4.7	+5.7	Nil	-0.49
Patan	Nil	Nil	Nil	,,	Nil
Nadaut	-0.17	,,	-	,,	,,
Baroda	Nil	,,	Nil	,,	,,
Broach	,,	-0.2	,,	,,	,,
Champaner	,,	Nil	,,	,,	,,
Surat	-0.24	-0.7	1.12	,,	,,
Godhra	-0.08	+1.05	-	,,	,,
Saurath	-	Nil	-	-	-
AJMER					
Ajmer	+1.5	-1.2	-.2	-	-
Chittor	0.5	+0.05	Nil	-	-
Ranthambor	-	-0.4	-59.0	-	-
Jodhpur	-	+0.05	-	-	-
Sirohi	-	Nil	-	Nil	Nil
Nagaur	-0.6	-.2	-15.95	-	-
Bikaner	-	Nil	-	-	-
DELHI					
Delhi	Nil	+0.71	+0.4	Nil	-2.43
Badaun	,,*	-0.06	Nil	,,	Nil
Kumaun	-	Nil	-	-	-
Sambhal	-0.8	-.5	Nil	Nil	Nil
Saharanpur	Nil	Nil	+6.25	,,	,,
Rewari	,,	,,	Nil	,,	+4.79
Hisar Firuza	,,	,,	-7.7	,,	Nil
Sirhind	-0.04	,,	+1.03	,,	+0.186
LAHORE					
Bet Jalendhar	+0.5	+0.2	+2.9	-2.41	-26.57
Bari	-3.76	Nil	-0.15	-65.02	-46.09
Rachnao	+0.31	+4.4	-1.34	-1.77	+2.206
Chanhat	-0.16	Nil	Nil	-1.61	-4.52
Sidh Sagar	-1.5	-0.5	Nil*	-11.689	-8.39
Bairun Panjnad	-	Nil	-	Nil	Nil
MULTAN					
Multan	+35.08	+11.93			
Dipalpur	- 1.31	-39.26			
Bhakkar	Nil	Nil			

It is apparent here that even in the text so restored, there are numerous discrepancies between the stated totals and the actual totals. Most of these discrepancies are, however, only marginal (within a range of ± 2%). Many of these too can be removed by accepting alternative readings; a course which I have not been able to follow in these cases either because there are more than one option open to us in selecting the correction, or the mistranscription cannot therefore be pinpointed definitely, or, finally, it requires three or four 'corrected' readings (i.e. assuming a series of mistranscriptions), and this would surely mean taking too much liberty with the text. In any case, the differences where such fresh readings can yield consistency in stated and actual totals are usually so minor that they would not affect analysis at any level.

But beyond such marginal, or theoretically removable differences between the stated and actual totals in the Āīn, there are some other variations which cannot be explained away as mere scribe's slips; they are occasionally substantial enough to force themselves upon our notice. Out of the 70 sarkārs, for which we have the two sets of ārāzī totals (viz., stated and actual), only in four sarkārs (Kalpi, Ahmadabad, Bari Doab and Multan) does the difference between

the two totals exceed ± 2%. In the case of the jamaʿ of the 82 sarkārs (excluding the sarkār of Qandhar and Kashmir where the jamaʿ is not stated in one unit) the difference is significant only in five (Baitalwadi, Ahmadabad, Rachnao, Multan and Dipalpur). In the columns of the suyūrghāl, sawār and piyāda, the number of inconsistent totals is, however, larger: Out of the 66 totals of the suyūrghāl 17 differ substantially; out of 58 sarkārs where both the stated and actual totals for the sawār and the piyāda, are available the number of those differing significantly is 7 and 16 respectively for sawār and piyāda.

One possible source of these variations could be errors of calculation in Abūl Fazl's own secretariat during the transfer and arrangement of figures. It seems very unlikely that Abūl Fazl received the pargana statistics in the form in which they appear in the Āʾīn; that is, arranged semi-alphabetically, with the figures written out in words. It is thus probable that in Abūl Fazl's secretariat the data were not only transferred from the records but were also reorganised, so that Abūl Fazl's staff could well have made errors, whenever there was some lack of care at one or other stage of the work.

An illustration of such errors is offered by the figures of <u>sūba</u> Multan. In this <u>sūba</u> two of the three <u>sarkārs</u> are divided into <u>doābas</u> (each subdivided into <u>parganas</u>); and, therefore, here the totals in the various columns are available at three levels, namely, <u>sūba</u>, <u>sarkār</u> and <u>Doāba</u> besides the primary figures for <u>parganas</u>. The <u>sūba</u>-level totals, viz., the stated <u>sūba</u> figures, and the totals of <u>sarkārs</u>, of the <u>doābas</u> and of the <u>parganas</u>, are as follows:

	Stated <u>sūba</u> Total	Total of stated figures for <u>sarkārs</u>	Totals of stated figures for <u>doābas</u>	Actual total of figures for <u>parganas</u>
<u>Ārāzī</u>	32,73,932	30,74,452	30,74,452	32,51,697
<u>Jamaʿ/naqdī</u>	15,14,03,619	20,09,75,418	20,07,28,799	15,62,53,243
<u>Suyūrghāl</u>	30,59,948	81,73,825	37,59,948	30,98,282
<u>Sawār</u>	18,785	18,775	18,785	18,735
<u>Piyāda</u>	1,65,650	1,55,050	1,65,150	1,66,150

It can be seen that the total <u>jamaʿ</u> and the total of <u>ārāzī</u> stated for the <u>sūba</u> largely differ from the sums/the stated totals for the <u>sarkārs</u> and the <u>doābas</u>, but the latter two are close to each other. If one looks at the detailed <u>doāba</u> figures, the sources of difference in the case of both <u>ārāzī</u> and <u>jamaʿ</u> can be located. The stated <u>ārāzī</u> total for <u>Doāba</u> Bet Jalendhar is 52,090 <u>bīghas</u> while the <u>pargana</u> figures

total up to 2,52,274 *bighas*. Obviously the digit 2 at the extreme left in the *Doāba* total was dropped by oversight at an early stage; the total for the *sarkār* was calculated from the figures for the *doābas* which contained this error, and the error was thus carried on to the stated *sarkār* total. The *sūba* total which was perhaps received independently from the official records (when it must have been calculated directly from the *pargana* figures) remained unaffected.

The difference in *jama'* totals, on the other hand, is due to the misreading of the total for *doāba* Bet Jalendhar of *sarkār* Dipalpur. Here the stated total is 8,88,08,955 *dāms*, while the *pargana* total is only 3,88,08,755 *dāms*. It would seem that the original figure being almost certainly in the *raqam* notation, Abu'l Fazl's assistants read three ( ) of the *raqam* in 'three crores' as eight ( ). The *sarkār* total must have been worked out afterwards from the *doāba* figures so read, and thus carries a fictitious enhancement of 5 crores. The *sūba* total, however, remained unaffected, having been derived, as we have suggested, from the *pargana* figures directly.

Another similar mistake, detected in the *jama'* statistics of Bengal and Orissa, can also be ascribed to

Abul Fazl's own staff. He states the jama' of the sūba of Bengal and the sub-sūba of Orissa (attached to Bengal) as 59,84,59,319 dāms. But the stated totals for the sarkārs yield a total of 42,51,03,099 dāms; that is, the stated total for the two regions is 17,33,56,220 dāms in excess of the jama' based on the sarkār totals. The actual total of the pargana figures too is broadly in conformity with the sarkār total, being 43,07,94,875 dāms. The excess in the Āīn's stated total for Bengal and Orissa is practically straightaway explained by the fact that the k jama' for the five sarkārs of Orissa, grouped together in the Āīn with a separate subsection , add up to 17,07,32,638 dāms. This is so close to the amount of excess that the assumption is irresistible that a clerk in Abul Fazl's office unclear as to whether the sūba total received for Bengal included the figure for Orissa or not added its total to that of the received figure. The correction is important, because, as restored, the Āīn's figures suit the subsequent statistics much better.[1]

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1. Thus the Iqbālnāma-i Jahāngīrī (Or. 1834, ff.231b-232b) gives 41,91,07,870 dāms for Bengal and Orissa at Akbar's death. This matches well with the pargana total in the Āīn (43,07,94,875 dāms), the total of stated sarkār figures (42,51,03,099 dāms) and the stated figure in the Āīn less the jama' for the Orissa sarkārs (42,77,26,681 dāms). Otherwise one would have to postulate an enormous decline in the jama' within ten years. Similarly, 25,43,70,461 dāms as the jama' for Bengal would eliminate the impression of decline in the jama' in Bengal alone, between 1595-6 and 1632, as appears from the table in Irfan Habib, Agrarian System, p.400; the figure of 42,77,26,681 under Bengal should there be replaced by 25,69,94,043 dāms. The table on p.328 of his book would have to be corrected accordingly.

The statistics of _sūbas_ of Multan and Bengal, therefore, offer a clear example of errors made at Abul Fazl's own office. However, the very small number of cases where such errors of calculation can be postulated, suggests that all the inconsistencies between the stated and actual totals cannot be laid at the door of some subordinate of Abul Fazl who was careless in his calculations.

One other possible error resulting in such inconsistency, could be assigned to an opposite cause: The total as stated has been correctly calculated, but wrong figures have been put against _parganas_ in the process of arranging them alphabetically. For such an error to affect totals (which would remain unaffected if figures of _mahal_ A are assigned to B and _vice versa_), one should expect figures against some _parganas_ to be repeated (i.e. those of _mahal_ A are assigned to A as well as to B, whose actual figures do not appear). But such cases of duplication are not, in fact, found anywhere in the statistics except in _sūbas_ Lahore and Gujarat. In Lahore, in the _Doaba_ Bet Jalendhar, the _ārāzī_ and _jama‘_ figures are exactly the same in three _parganas_, though the names of the _zamīndārs_ and the number of the _sawārs_ and _piyādas_ vary. Similarly in _Doāba_ Rachnao the same _ārāzī_ and _jama‘_ figures appear against two _parganas_, though the two are placed far apart. In _Doāba_ Sindh

Sagar the same jama' and ārāzī figures are entered against for four parganas. But as will be seen in Chapter II, these repetitions are not really transcriptional mistakes at all. All these parganas are situated in hilly tracts and here the ārāzī figures appear to be fictitious not having been obtained through actual measurement but calculated from the jama' (fixed in round numbers) at arbitrary ratios of 1:41.2 and 1:39. dāms per bīgha.[1] There are other maḥals too with ārāzī recorded with the same ratios with the jama', in all the four doābas of the ṣūba. In ṣūba Gujarat one comes across a lone repetition, which could be transcriptional error at the initial or some very early stage. The jama' recorded for pargana Godhra bā ḥavelī and Kokana, the pargana immediately following it, is exactly the same; but no other figure from the former parganas is repeated against the latter. The mistake seems real because the stated total of the jama' for sarkār Godhra differs from the actual total, the difference being 2,36,140 dāms while the total of jama' figures as entered for parganas of the sarkār (including the repeated figures) is 7,85,669 dāms.

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1. See Chapter II.

The fact that there is only one such definitely established error of misalignment in the entire statistics is sufficient to show that the transcription and reorganization of data, at Abul Fazl's secretariat was done with considerable care and one can assume, on the whole, that the rows in the tables are set correctly against the appropriate mahals.

Finally there remain some variations in the stated and actual totals that cannot be attributed either to simple slips of arithmetic or to mistranscription by Abul Fazl's assistants. For instance the stated ārāzī for sarkār Kalpi in sūba Agra is 3,00,029 bīghas, 9 biswas, but the pargana figures aggregate to 17,36,107 bīghas, 12 biswas. The ārāzī making up the latter total is well spread out among the parganas and the difference could not therefore be due to mistranscriptions of one or two figures. Moreover, for sūba Agra the stated total of the ārāzī is over 30,00,000 bighas higher than the total obtained by adding up the stated sarkār totals. One may, therefore, suggest that here the difference is a genuine one, caused probably by the partial incorporation of subsequent revision: it is possible that there was an extension of measurement in the various parganas of the sarkārs, after the original statistics had been received. The revised pargana details as received subsequently were incorporated, but the sarkār total was left

uncorrected, though the *ṣūba* total was apparently changed to accord with the enhancements of the *ārāzī* in *sarkār* Kalpi as well as other *sarkārs*.

It is interesting to note that the variations, which can be explained by revisions alone, are found in the two *ṣūbas* containing the capitals, namely, Lahore and Agra. Possibly, being the 'core areas' of the Empire these were subjected to more frequent revisions which could not be incorporated fully or consistently in the *Āʼīn*'s statistics. Some revisions were introduced only in the totals without altering the *pargana* details; in other cases the *pargana* figures were updated but the totals, (all or some of them), remained unchanged. In *ṣūba* Agra the recorded *jamaʻ* for the *ṣūba* exactly matches the total of the figures stated for the *sarkārs*, but the *jamaʻ* worked out from the *pargana* is a little less (0.23%). Here perhaps the *ṣūba* and *sarkār* figures were changed according to later revisions; but some *pargana* figures were left unaltered.

We have already noticed that while for the *ārāzī* and the *jamaʻ*, the totals are, by and large, consistent, the differences are more frequent and pronounced in the totals of the *suyūrghāl*, *sawār* and the *piyāda*. In the case of the *zamīndārs*' retainers (the *sawār* and the *piyāda*), quite a few of the differences in the recorded and calculated totals can be

removed by assuming transcriptional errors (sometimes, sets of such errors). However, the suyūrghāl totals cannot be made consistent with each other as easily. Another interesting feature is that out of 17 significant differences in totals, the actuals based on the pargana figures are lower than the stated sarkār totals in as many as 13 cases. In sūba Agra the suyūrghāl stated for the sūba is only 56% of the total of the figures recorded for the individual sarkārs which in turn is lower (4,49,866 dāms) than the actual total of the pargana figures. Could one suggest that there occurred a substantial reduction in the suyūrghāl in the sūba of Agra; so that while the sūba figure was brought up-to-date only a few sarkār totals and pargana details were altered? This substantial reduction would of course be in line with what we know of Akbar's policy of resuming and restricting revenue-grants in his later years.[1]

Another fact that strengthens the impression of frequent revisions in the sūba of Agra is that against some sarkārs the total number of parganas is not specified; and the stated number of parganas for the suba falls considerably below the actual number of parganas. In some other sūbas too the stated number of parganas for the entire sūba does not exactly match the actual total; but the differences are mostly marginal. (See Appendix II).

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1. Irfan Habib, Agrarian System, p.310 & n.

Thus it appears that, on the whole, the incorporation of subsequent revisions may be responsible for most of the differences in totals at various levels, remaining after MS variants are collated and Abu'l Fazl's own errors corrected. Since it is likely that the stated _ṣūba_ totals are in accord with the revised figures, it does not mean that the _sarkār_ or _pargana_-level figures are necessarily unreliable; what we are faced with is only the fact that they may belong to different years than those of the stated totals. For any detailed analysis the use of _pargana_ statistics is, therefore, inescapable. In any case, it is good to recall that, as established by Table I, the differences between the actual totals from figures for _pargana_ and the stated _sarkār_ and _ṣūba_ totals are mostly negligible or quite marginal in respect of the _ārāzī_ and the _jamaʿ_ statistics. The variations should always be borne in mind, of course, especially where they are, say, of a magnitude larger than ± 2%; but, in hardly any case, would the interpretations or conclusions in this thesis be affected if one possible alternative figure is substituted for the other. Where such a possibility exists, as in the case of figures for _suyūrghāl_ or _zamīndārs_' retainers (_sawār_ and _piyāda_), this would have to be duly noted.

In the Appendix to this Chapter, I have set out the corrected and revised totals for the sarkārs and sūbas, based on corrections of transcriptional errors, and the actual retotalling of pargana figures. The figures so established by me for the various columns (ārāzī, jamaʻ, suyūrghāl, sawār and piyāda) (and not those of the Blochmann edition) are the figures that will be used in all the calculations made in the present thesis.

III

OTHER SOURCES

Though the Āʼīn-i Akbarī must form the bed rock of any quantitative study of the economy of the Mughal Empire, one cannot do without a large amount of other contemporaneous material. For one thing, the Āʼīn itself cannot be interpreted in isolation. Its terminology can often be uderstood only by reference to other sources where definitions or illustrative uses of the terms occur. For matters of chronology and political geography, essential for comprehending the Āʼīn's statistics, we have to consult the histories of the period; many administrative measures, basic to our understanding of why and how the statistics

came to be compiled or what they denote, also happen to be described in the conventional historical sources.

For all these purposes the Akbarnāma of Abūl Fazl[1] forms the major source complementary to the Āīn-i Akbarī, as Moreland has so strongly urged.[2] The Akbarnāma is the most detailed, and for administrative history, the most reliable account of Akbar's reign. It not only gives considerable space to administrative measures, but also summarises official documents such as the memorandums of Todar Mal and Fathullah Shīrāzī. One MS of the work even gives us the original text of Todar Mal's memorandum on revenue administration.[3]

However, it is not Abūl Fazl's own work alone but other contemporary accounts as well that are of assistance. Bāyazīd Bayāt's memoirs,[4] the Tabaqāt-i Akbarī of Nizāmuddīn Ahmad[5] and the Muntakhabu-t Tawārīkh of Badāūnī,[6] help us in

1. Akbarnama, Bib. Ind. text, 3 Vols., Calcutta, 1873-87. The translation by H. Beveridge, Calcutta, 1897,-1921, though painstaking, is not of much use for interpretation of technical matters.
2. W.H. Moreland, Agrarian System of Moslem India, pp.80-82.
3. Br. Mus. Add. 27,247: The memorandum is reproduced on ff.331b-332b. The MS apparently represents an early draft of the Akbarnāma.
4. Tazkira-i Humāyūn-o-Akbar, ed. M. Hidayat Hosain, Bib. Ind. Calcutta, 1941.
5. Ed. B. De, Bib. Ind., 3 Vols. (Vol. III revised and partly edited by M. Hidayat Hosain), Calcutta, 1913-35.
6. Ed., Ali Ahmad and Lees, Bib.,Ind., Calcutta, 1864-69.

solving one or the other problem encountered in quantification. For instance the working of the mansab system that was essential for calculating the income of the ruling class becomes clear only through the accounts offered by Bāyazīd, Badāūnī and Muʿtamad Khān's Iqbālnāma-i Jahāngīrī.[1] The last by often restating Abūl Fazl's stately narrative in simpler language, he enables us to understand the significance of particular measures and terms.

Furthermore, though the Āīn-i Akbarī remains the only work that offers a comprehensive range of statistical information, it is not the sole source of quantitative data for its time. The Tabaqāt-i Akbarī written c.1593 offers revenue statistics as well as a list of mansab-holders. Firishta gives us figures for wealth, treasure and numbers of animals left by Akbar.[2] A manuscript of Muʿtamad Khān's Iqbālnāma gives us important data such as revenue statistics and salary scales of

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1. The Iqbalnāma-i Jahāngīrī comprises three volumes. Vol. I covers the reigns of Babur and Humayun, and II that of Akbar; Vol. III is devoted to that of Jahangir. The work was originally written in Jahāngir's time partly to supersede the Akbarnāma by offering an account in a more simple language and removing references not favourable to Jahangir. I have used the Nawal Kishor ed., lithographed, Lucknow, 1870, for Vols. I and II. Vol. III, also published in Bib. Ind. series ed. Abdul Hai and Ahmad Ali, Calcutta, 1865, was written after Jahangir's death, and is not of much use for our present purpose.

2. Abul Qāsim 'Firishta', ed. Nawal Kishor, Kanpur, 1874, Firishta says that his information came from an official (?) paper which had come into his possession. He was writing about 1606-7.

the mansabdars, for the Empire at the death of Akbar.[1] These Persian works can be supplemented by some statistics preserved in near contemporary accounts of European sources. John Hawkins (1608-11) and Francisco Pelsaert in his'chronicle' gives us details of Akbar's treasure, animals, and army, the details of which are obviously derived from Persian documents.[2]

European literature of about this time also begins to furnish information about manufactures and commerce gathered mainly from the requirements of the Dutch and English commerce with India. Closest to the period with which we are concerned and the most valuable from the point of view of a general, as well as statistical, study of the Mughal Indian economy, is Pelsaert's Remonstrantie, written c.1626.[3] The data he gives on matters such as indigo production, prices of individual commodities, mode of life of the artisans and of the ruling class,

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1. See Br. Mus. MS Or. 1834. This MS contains Vol. II of Iqbāl-nāma and the statistics in question occur at the end of the volume. So far as known this MS is unique in reproducing them. Internal evidence (such as the inadvertant use of the term tanka for dām) suggests that it is no late insertion, although the MS itself was transcribed rather late, probably early in the 19th century.

2. The 'Journal' of Hawkins was published by Purchas in his Purchas his Pilgrimes; it may be read in Mac Lehose's edition of that work, Glasgow, 1905, Vol. III, pp.1-50. W. Foster has published it with some annotations in his Early Travels in India, pp.60-121. Pelsaert's 'Chronicle', originally in Dutch has been translated by B. Narain and S.R. Sharma as A Contemporary Dutch Chronicle of Mughal India, Calcutta, 1957. Its language and Hijra dates proclaim its dependence on a Persian original.

3. English translation, with useful annotation, by W.H. Moreland and P. Geyl, Jahangir's India, Cambridge, 1925.

are all of exceptional utility for us. At the same time, the English commercial records also begin, from whose large mass individual pieces of relevant information can be extracted. The records have been published in two series, Letters Received by the East India Company from its Servants in the East and the English factories in India.[1] A large number of European travellers also left their accounts, of uneven value from our point of view; most of these found a place in the great collection of travellers' documents compiled by Samuel Purchas, Purchas his Pilgrimes, London, 1625.[2]

Recent researchers have succeeded in shaping European statistics of world commerce of the latter half of the 16th century and the early years of the 17th century into manageable proportions; and, these can, therefore, be used by students of Indian Economic history. Earl J. Hamilton undertook a fundamental study of the quantities of silver and gold that flowed in from the Americas to the Old World during the

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1. The Letters Received, 6 Vols., London, 1896-92, were edited by F.C. Danvers (Vol. I) and W. Foster (Vols. II-VI); the six volumes cover the period 1602-17. The 13 volumes of the English Factories were edited by Foster, 1906-27, and cover the period 1618-69.

2. The edition I have used is that of MacLehose, Glasgow, 1905. Many (but by no means all) of these travellers' journals are included in W. Foster (ed.), Early Travels in India (1583-1619), London, 1927.

16th and 17th centuries; his study was mainly based upon the Spanish archives.[1] The Portuguese records have been explored most extensively by Vitorino Mgalhaes-Godinho, so that almost, for the first time, Indo-Portuguese trade of the 16th century can be studied in quantitative terms.[2] Simultaneously, the Venetian records have been used by Frederic C. Lane and Fernand P. Braudel for establishing the quantities of Eastern goods that entered the Mediterranean through the Levant in the 16th century.[3] These works have been made use of, along with much direct exploration of statistical material from Portuguese and Italian sources, by Niels Steensgaard in his Asian Trade Revolution of the Seventeenth Century. In spite of the title Steensgaard's main concern is with the period c.1585-1620.[4] Quite obviously, direct access to the original records used by these writers is not possible for me; but the secondary works have made it possible to supplement a statistical study of the

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1. American Treasure and Price Revolution in Spain, 1501-1650, Cambridge (Mass), 1934.

2. L economie de l empire portugais au xve et xve sieches, Paris, 1969.

3. The two basic articles by Lane have been published by Brain Pullan in Crisis and Change in Venetian Economy in the Sixteenth and Seventeenth Centuries, London, 1968, pp.25-58. Braudel's classic work is the Mediterranean and the Mediterranean World in the Age of Philip II, 2 Vols., London, 1972-3. The Eastern trade, with its statistics, is studied in Vol. I, pp.542-570.

4. Steengaard's work ~~just~~ first appeared under the title Carracks, Caravans and Companies, Copenhagen, 1973. I have, however, used the University of Chicago Press Edition, 1974, under the changed title.

internal economy of the Mughal Empire with quantitative survey of at least some important sectors of India's oversea trade.

Finally, there is material of a quite different kind, which lends itself to quantification and makes possible a statistical study of money supply within the Mughal Empire. It was Aziza Hasan who first suggested that surviving numbers of Mughal coins, which contained both the name of the issuing mint and the year of issue, can be counted and made to yield a currency output curve.[1] The method adopted by her to count the coins has been criticised by John S. Deyell;[2] but, as will be seen in Chapter XIV, such force as Deyell's criticism may have, is met by using records of the hoards and stray finds instead of (or, in addition to) the catalogued Museum collections. The numbers of Mughal coins whose finds have been recorded in U.P. alone are large enough to justify quantification with a considerable degree of confidence.

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1. 'The Silver Currency Output of the Mughal Empire and Prices in India during the 16th and 17th centuries', IESHR, VI (1969), pp.85-116; and 'Mints of the Mughal Empire: A Study in Comparative Currency Output', Proc. I.H.C., Patiala Session, (1968).

2. IESHR, XIII (3), pp.393-401.

IV. MODERN STUDIES OF MUGHAL STATISTICS

Ever since Moreland brought out the importance of the Āin-i Akbarī's statistics as a possible means of studying the economy of Akbar's Empire in quantitative terms,[1] it has continued to receive attention from economic historians.

Moreland himself made the first serious effort to study the data systematically. In a series of articles and in three major books,[2] he attempted to establish, largely on the basis of the Āīn's information, the extent of cultivation, the size of population, the incidence of land-revenue, and the levels of prices and wages. Radhakamal Mukerjee offered a study on similar lines, but generally with opposite conclusions.[3] The Āīn's statistics for area, prices and revenue have been used again by Irfan Habib, who questioned some of Moreland's assumptions, and partly collated the printed text with the MSS

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1. W.H. Moreland, 'The Ain-i Akbari - A possible base-line for the Economic History of Modern India', Indian Journal of Economics, I, 1916, pp.33-44.

2. W.H. Moreland, The Agrarian System of Moslem India, Cambridge, 1929; India At the Death of Akbar, London, 1920 From Akbar to Aurangzeb, London, 1923; 'The Agricultural Statistics of Akbar's Time', JUPHS, Vol. II, Part I, 1919; 'The Prices and Wages Under Akbar', JRAS, 1917; 'The Value of Money at the Court of Akbar', JRAS, 1918.

3. R.K. Mukerjee, Economic History of India, 1600-1800, Allahabad, 2nd ed., 1967.

to obtain some important findings. Some of his interpretations of terms, and his determination of the units of weight and measures of land are of great help in using the Ā'īn's statistics.

A more recent effort still has been that of A.V. Desai, who has tried to draw from the Ā'īn information even on topics on which at first sight it seems to have little to offer. His main purpose has been to estimate the population, c.1600, from various data, while also establishing the comparative levels of consumption.[1]

The existing work on the Ā'īn's economic statistics is thus not inconsiderable. But there has been no attempt at a single integrated interpretation of the various kinds of data it provides; nor have they been supplemented by and checked with data from other contemporaneous sources. The Ā'īn's statistics, in other words, have been studied largely on a fragmentary basis alone. Some of the secondary works also suffer from a lack of proper understanding of the technical terms. For example, Moreland assumed the ārāzī to be the total gross cropped area, and the jamaʿ to be estimated gross land-revenue,

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1. A.V. Desai, 'Population and Standard of Living in Akbar's Time', IESHR, IX, 1972. A spirited defence of the reliability of the Ā'īn's data is offered by him in IESHR, Vol. XV, No. I, 1978.

('Valuation'), both of which are perhaps oversimplified assumptions.[1] Irfan Habib who is mostly cautious in interpreting the Āīn's terminology, has yet followed some of the conventional meanings: The jamaʿ to him remains the estimated gross revenue, and not as is argued in this thesis, the estimated net revenue realization.

Finally, the progress of research in other fields has opened avenues for further study of the statistical information. The availability of the detailed maps, giving boundaries of sarkārs and revenue-circles[2] has not only enabled us to establish more firmly the definition of the ārāzī by comparing it with the map-area, but also to attempt a study of revenue-incidence per unit of area, in different localities and regions. There has also been much important work of a statistical kind on the oversea trade in the 16th and 17th centuries, which has already been noticed in the preceding section.

In the present work an attempt is, first of all, made to obtain as far as possible a rigorously grounded

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1. See Chapters II & V.

2. Irfan Habib, Atlas of the Mughal Empire, Delhi, 1981 (expected).

interpretation of the text of the Āīn. As has been explained earlier, the correct text of the statistics is sought to be established by MS collation as well as by the checking of internal figures. Calculations have been made on a comprehensive basis, covering all the pargana-level statistics, so that the Āīn's totals have been checked in each case, often resulting in a correction of either the total or some individual figure for a pargana.

But more than this, while the data on different sectors of the economy are studied separately, the information in one sector is sought to be correlated with that of another to draw inferences on matters not directly illuminated by the Āīn's statistics. An endeavour is also made to pay close attention to geography, not only in quantitative terms (e.g. map-area, modern estimates of gross cultivation), but also in order to discover possible regional and local differences. In spite of the pitfalls that such an effort must involve, it is yet hoped that certain new questions have been formulated. At the same time some new conclusions are offered, that may at least claim acceptance on a tentative basis.

Appendix I

ABSTRACT OF ĀĪN'S STATISTICS ('ACCOUNT OF THE TWELVE SŪBAS)

(STATED AND REVISED)

(a) ĀRĀZĪ

	Stated Totals for sarkārs	Totals of figures for parganas	Total stated for the sūba
BIHAR			
Bihar	9,52,590	9,52,588- 4	
Champaran	85,711- 5	85,711- 5	
Hajipur	4,36,952-15	4,36,951- 7	
Saran	2,29,052-15	2,29,052- 3	
Rohtas	4,73,340-12	4,73,331- 1	
Tirhut	2,66,464	2,66,881- 2	
Total for the sūba	(24,44,111-12)	24,44,517-12	24,44,120
ALLAHABAD			
Allahabad	5,73,615	5,73,585	
Ghazipur	2,88,780- 7	2,88,780-12	
Benaras	1,56,863-12	1,54,702-12	
Jaunpur	8,70,265- 4	8,70,707	
Manikpur	6,66,222- 5	6,66,919-12	
Chunar	1,06,270	1,06,269-16	
Kalinjar	5,08,273-12	5,08,273-12	
Kora	3,41,170-10	3,41,167- 3	
Kara	4,47,556-12	4,50,487-15	
Total for the sūba	(39,59,017- 2)	39,60,892- 7	39,68,000- 3
AWADH			
Awadh	27,96,206-19	27,99,973-17	
Gorakhpur	2,44,283-13	2,44,289- 8	
Bahraich	18,23,435- 8	18,23,435- 3	
Khairabad	19,87,000- 6	19,88,024- 6	
Lucknow	33,07,426- 6	33,02,640	
Total of the sūba	(1,01,58,382-12)	1,01,58,363-14	1,01,71,180

	Stated Totals for *sarkars*	Totals of figures for *parganas*	Total stated for the *sūba*
AGRA			
Agra	91,07,622- 4	91,82,258	
Kalpi	3,00,029- 9	17,36,107-12	
Qanauj	27,76,673-16	27,76,673-16	
Kol	24,61,731	24,58,431	
Gawalior	15,46,465- 6	15,46,465	
Earach	22,02,124-18	22,02,136-18	
Payanwan	7,62,014	7,62,014	
Narwar	3,94,350	3,94,358	
Mandlaer	65,346	65,321	
Alwar	16,62,012	16,30,368	
Tijara	7,40,001- 5	7,40,001- 6	
Narnaul	20,80,046	20,81,346	
Sahar	7,63,474	7,63,474	
Total for the *sūba*	(2,48,61,865-13)	2,63,38,956- 0	2,78,62,189- 2
MALWA			
Ujjain	9,25,322	9,25,622	
Raisen	(1,68,617)	1,68,617	
Chanderi	5,54,277-17	5,54,277	
Sarangpur	7,06,202	7,06,204	
Bijagarh	2,83,277-13	2,83,277-13	
Mando	2,22,969-15	2,23,009	
Handia	2,89,573-15	2,89,573	
Nadurbar	8,59,604	8,59,604	
Mandasor	-	-	
Gagraun	63,529	63,529	
Kotri Priawa	1,92,839	1,92,821	
Total for the *sūba*	(42,66,212)	42,66,533	42,66,221- 6
GUJARAT			
Ahmadabad	80,24,153	84,19,201	
Patan	38,50,015	38,50,909-16	
Nadant	5,41,317-16	5,40,425	
Baroda	9,22,212	9,22,212	
Bhroach	9,49,771	9,49,731	
Champaner	8,00,337-11	8,00,328	
Surat	13,12,815-16	13,09,614	
Godhra	5,35,255	5,34,815	
Total for the *sūba*	(1,69,35,877- 3)	1,73,27,235	1,69,36,377- 3

	Stated Totals for <u>sarkārs</u>	Totals of figures for <u>parganas</u>	Total stated for the <u>sūba</u>
AJMER			
Ajmer	56,05,487	56,92,850	
Chittor	16,78,800	16,87,794	
Ranthambor	69,24,196	60,28,374	
Nagaur	80,37,450-14	80,36,893	
Total for the <u>sūba</u>	(2,13,45,933-14)	2,14,45,911	2,14,35,941- 7
DELHI			
Delhi	71,26,107-18	71,24,097- 3	
Badaun	18,93,850-10*	18,93,756	
Sambhal	40,47,193- 2	40,15,101- 3	
Saharanpur	35,30,379	35,30,679	
Rewari	11,55,001	11,55,011	
Hisar Firuza	31,14,497	31,14,497	
Sirhind	77,29,466-17	77,32,256	
Total for the <u>sūba</u>	(2,85,96,401)	2,85,65,397	2,85,46,816-16
LAHORE			
Bet Jalendhar	32,79,302-17	32,96,668	
Bari	45,80,002	44,07,980	
Rachnao	42,53,148	42,66,560	
Chanhat	26,33,210	26,29,040	
Sindh Sagar	14,09,979	13,88,744	
Bairun Panjnad	-	-	
Total for the <u>sūba</u>	(1,61,55,642)	1,59,88,992	1,61,55,643- 3
MULTAN			
Multan	5,58,651- 4	7,54,638-11	
Dipalpur	14,33,767- 8	14,15,046- 9	
Bhakkar	2,82,013	10,82,013	
Total for the <u>sūba</u>	(30,74,451-12)	32,51,697	32,73,932

* The figure in the MSS is 80,93,850-10.

(b) JAMAʿ (NAQDĪ)

	Stated Totals for sarkārs	Totals of figures for pargana	Total stated for the sūba
BENGAL			
Tanda	2,40,78,700½	2,40,53,271	
Gaur	1,88,46,967	1,62,69,493	
Fatehabad	79,69,568	79,76,837	
Mahmudabad	1,16,10,256	1,27,06,178	
Khalifatabad	54,02,140	54,00,318	
Bakla	71,31,641	71,31,440	
Purnea	64,08,793	64,08,633	
Tajpur	64,83,857	94,62,846	
Ghoraghat	89,83,072	86,41,941	
Panjra	58,03,275	57,97,475	
Barbakabad	1,74,51,532	1,74,50,351	
Bazuha	3,95,16,871	3,94,66,643	
Sonargaon	1,03,31,333	1,34,16,513	
Silhat	66,81,308	70,56,608	
Chatgaon	1,14,24,310	1,14,23,510	
Sharifabad	2,24,88,750	2,24,74,402	
Sulaimanabad	1,76,29,964	1,76,63,969	
Satgaon	1,67,24,724	1,67,03,515	
Madaran	94,03,400	93,80,042	
	25,43,70,461	25,88,83,985	
ORISSA			
Jalesar	5,00,52,738	5,00,45,684	
Bhadrak	1,86,87,170	1,86,86,170	
Katak	9,14,32,730	9,26,19,036	
Kalingdandpat	55,60,000	(55,60,000)	
Raj Mahendra	50,00,000	(50,00,000)	
	17,07,32,638	17,19,10,890	
Total for the sūba	(42,51,03,099)	43,07,94,875	59,84,59,319
BIHAR			
Bihar	8,31,96,390	8,32,65,491	
Monghyr	2,96,25,981½*	2,96,22,181½	
Champaran	55,13,420	55,13,420	
Hajipur	2,73,31,030	2,73,36,635	
Saran	1,61,72,004½	1,61,72,304½	
Tirhut	1,91,89,777½	1,91,20,826½	
Rohtas	4,08,19,493	4,08,79,201	
Total for the sūba	(22,18,48,095)	22,19,10,059	22,19,19,404

*In MSS is 10,96,25,981½.

	Stated Totals for *sarkārs*	Totals of figures for *pargana*	Total stated for the *sūba*
ALLAHABAD			
Allahabad	2,28,31,999	2,28,31,599	
Ghazipur	1,34,31,325	1,37,29,622	
Benaras	88,60,318	88,60,618	
Jaunpur	5,63,94,927	5,60,02,527	
Manikpur	3,39,16,527	3,39,06,527	
Chunar	58,10,604	58,10,954	
Battha Ghora	76,62,780	(76,62,780)	
Kalinjar	2,38,39,470	2,38,09,087	
Kora	1,73,97,567	1,73,96,561	
Kara	2,26,82,048	2,26,54,068	
Total for the *sūba*	(21,28,29,565)	21,26,64,343	21,24,27,819
AWADH			
Awadh	4,09,56,347	4,09,56,147	
Gorakhpur	1,19,26,790	1,19,26,290	
Bahraich	2,41,20,525	2,41,20,519	
Khairabad	4,36,44,381	4,36,49,761	
Lucknow	8,07,16,160	8,07,47,220	
Total for the *sūba*	(20,13,64,203)	20,13,99,937	20,17,58,172
AGRA			
Agra	19,17,19,265	19,05,25,826	
Kalpi	4,94,56,730	4,94,65,947	
Kanauj	5,25,84,620½	5,25,84,620½	
Kol	5,40,92,943	5,40,92,955	
Gawalior	2,96,83,649	2,96,83,348	
Earach	3,77,85,421	3,77,44,407	
Payanwan	84,59,296	84,58,596	
Narwar	42,33,322	42,33,320	
Mandlaer	37,38,084	37,38,084	
Alwar	3,98,32,234	3,97,82,529	
Tijara	1,77,00,460½	1,77,00,466½	
Narnaul	5,10,46,711	5,10,41,881	
Sahar	59,17,569	59,17,569	
Total for the *sūba*	(54,62,50,305)	54,49,69,548	54,62,50,304

	Stated Totals for sarkārs	Totals of figures for pargana	Total stated for the sūba
MALWA			
Ujjain	4,38,24,960	4,38,25,960	
Raisen	(1,39,92,792)	1,39,92,792	
Garh	1,13,77,080	1,14,32,025	
Chanderi	3,10,37,783	3,07,49,790	
Sarangpur	3,29,94,880	3,29,95,180	
Bijagarh	1,22,49,121	1,22,49,789	
Mandu	1,37,88,994	1,37,88,994	
Handia	1,16,10,969	1,13,10,969	
Nadurbar	5,01,62,250	5,01,62,250	
Mandsor	67,61,396	67,61,396	
Gurgaon	45,35,794	45,36,094	
Kotri Pirawa	82,31,920	82,32,920	
Total for the sūba	(24,05,70,939)	24,00,38,159	24,06,95,052
BERAR			
Gavil	13,46,66,140	13,46,66,140	
Punar	1,34,40,000	1,34,40,000	
Kherla	1,76,00,000	1,76,00,000	
Narnala	13,09,54,476	13,10,41,076	
Kalam	3,28,28,000	3,28,28,000	
Basim	3,26,25,250	3,26,25,250	
Mahur	4,28,85,440	4,28,85,440	
Manikdurg	1,44,00,000	1,44,00,000	
Pathri	8,07,05,954	8,03,05,954	
Telingana	7,19,04,000	7,23,04,096	
Ramgar	96,00,000	96,00,000	
Mehkar	4,51,78,000	4,51,76,000	
Baitalwadi	1,91,20,000	1,85,60,000	
Total for the sūba	(64,59,07,260)	64,54,31,956	64,26,03,270
GUJARAT			
Ahmadabad	20,83,06,994	21,80,51,765	
Patan	6,03,25,099	6,03,24,599	
Nadaut	85,97,596	85,97,596	
Baroda	4,11,45,895	4,11,45,895	
Broach	2,18,45,663	2,18,00,653	
Champaner	1,05,09,884	1,05,08,479	
Surat	1,90,35,180	1,90,21,985	
Godhra	34,18,329	36,54,469	
Saurath	6,34,37,366	6,34,33,187	
Port revenues (in sarkār Saurath)			26,02,060
Total for the sūba	(43,66,22,006)	44,65,38,628	43,94,24,361

	Stated Totals for *sarkārs*	Totals of figures for *parganas*	Total stated for the *sūba*
AJMER			
Ajmer	6,21,53,390	6,11,75,917	
Chittor	3,46,37,649	3,46,55,649	
Ranthambor	8,98,64,576	8,95,44,576	
Jodhpur	1,45,28,750	1,45,35,750	
Sirohi	4,20,77,437	4,20,77,437	
Nagaur	4,03,89,830	4,03,05,696	
Bikaner	47,50,000	47,50,000	
Total for the *sūba*	(28,84,01,332)	28,42,45,025	28,84,01,557
DELHI			
Delhi	12,30,12,596	12,38,84,848	
Badaun	3,48,17,063	3,47,96,159	
Kumaun	4,54,37,700	4,54,37,700	
Sambhal	6,69,41,431	6,65,90,020	
Saharanpur	8,78,39,850	8,78,36,099	
Rewari	2,88,07,718	2,88,07,718	
Hissar Firuza	5,25,54,905	5,25,45,305	
Sirhind	16,07,90,549	16,07,89,948	
Total for the *sūba*	(60,02,01,812)	60,06,87,797	60,16,15,550
LAHORE			
Bet Jalendhar	12,43,65,212	12,41,04,520	
Bari Doab	14,28,08,183	14,28,17,025	
Rachnao	17,20,47,391	17,96,67,816	
Chanhat	6,45,02,394	6,44,99,335	
Sindh Sagar	5,19,12,201	5,16,48,708	
Bairun Panjnad	38,22,740	38,22,740	
Total for the *sūba*	(55,94,58,121)	56,65,60,144	55,94,58,423
MULTAN			
Multan	5,32,16,318	5,92,66,006	
Dipalpur	12,93,34,153	7,85,62,285	
Bhakkar	1,84,24,947	1,84,24,952	
Total for the *sūba*	(20,09,75,418)	15,62,53,243	15,14,03,619

	Stated Totals for sarkārs	Totals of figures for parganas	Total stated for the sūba
THATTA			
Thatta	2,59,99,991	2,55,54,171	
Chachgan	1,17,84,586	1,17,84,586	
Sehwan	1,55,46,808	1,55,47,407	
Nasarpur	78,34,600	78,34,600	
Chakarhala	50,85,408	50,84,408	
Total for the sūba	(6,62,51,393)	6,58,05,172	6,61,52,393
KASHMIR	6,21,13,045	6,21,13,045	
KABUL (Excluding Kashmir)	8,05,07,465	8,05,07,465	

(c) SUYŪRGHĀL

	Stated Totals for sarkārs	Totals of figures for parganas	Total stated for the sūba
BIHAR			
Bihar	22,72,147	22,71,642	
Total for the sūba	(22,72,147)	22,71,642	22,72,147
ALLAHABAD			
Allahabad	7,40,021½	7,40,021½	
Ghazipur	1,31,825	1,21,837	
Benaras	3,38,184	3,38,084	
Jaunpur	48,17,654	30,55,181	
Manikpur	24,46,173	24,46,183	
Chunar	1,09,065	1,08,660	
Kalinjar	6,14,580	14,47,280	
Kara	4,69,350	4,69,315	
Kora	14,98,360	13,57,120	
Total for the sūba	(1,11,65,212½)	1,00,73,718½	1,11,65,417
AWADH			
Awadh	16,80,248	16,80,165	
Gorakhpur	51,235	51,235	
Bahraich	4,66,482	4,66,482	
Khairabad	17,13,862	16,75,140	
Lucknow	45,72,526	45,84,712	
Total for the sūba	(84,84,353)	84,57,737	85,21,658
AGRA			
Agra	1,45,66,878	1,43,49,526	
Kalpi	2,78,292½	10,58,292½	
Qanauj	11,74,655	11,82,655	
Kol	20,94,840	20,32,799	
Gawalior	2,40,350	1,81,120	
Earach	4,56,493	4,56,493	
Payanwan	82,660	82,666	
Narwar	95,994	95,694	
Alwar	6,99,212	6,99,215	
Tijara	7,31,761½	7,31,760	
Narnaul	7,75,103	7,75,083	
Sahar	1,09,447	1,09,447	
Total for the suba	2,13,05,685	2,17,54,751	1,21,05,703½

	Stated Totals for sarkārs	Totals of figures for parganas	Total stated for the sūba
MALWA			
Ujjain	2,81,816	2,81,816	
Chanderi	26,931	26,931	
Sarangpur	3,24,461	3,24,461	
Bijagarh	3,574	4,187	
Mando	1,28,732	1,28,032	
Handia	1,57,054	1,57,053	
Nadurbar	1,98,428	1,98,478	
Mandasor	29,387	29,387	
Total for the sūba	(11,50,383)	11,50,345	11,50,433
BERAR			
Gavail	1,28,74,048	1,12,73,348	
Narnala	1,10,38,422	1,05,85,174	
Basim	18,25,250	18,25,250	
Mahwar	97,844	97,844	
Pathri	1,15,80,954	1,02,85,943	
Telingana	66,00,000	66,00,000	
Mahkar	3,76,000	3,76,000	
Total for the sūba	(4,43,92,518)	4,10,43,559	
GUJARAT			
Ahmadabad	65,11,441	68,85,488	
Pattan	2,10,627	10,10,547	
Nadant	11,328	(11,328)	
Baroda	3,88,358	3,88,658	
Bhroach	1,41,820	1,41,520	
Champaner	1,73,730	1,73,730	
Surat	1,82,670	1,80,630	
Total for the sūba	(76,19,974)	87,91,901	4,20,274

	Stated Totals for sarkārs	Totals of figures for parganas	Total stated for the sūba
AJMER			
Ajmer	14,75,714	14,72,714	
Chittor	3,60,737	3,60,737	
Ranthambor	1,81,834	74,499	
Nagaur	3,08,051	2,58,915	
Total for the sūba	(23,26,336)	21,66,865	23,26,336
DELHI			
Delhi	1,09,90,260	1,10,00,460	
Badaun	4,57,181	4,57,181	
Sambhal	28,92,394	28,92,093	
Saharanpur	6,91,903	50,22,485	
Rewari	7,39,268	7,38,968	
Hissar Firuza	14,06,519	12,98,214	
Sirhind	1,16,98,330	1,18,18,250	
Total for the sūba	(2,88,75,855)	3,30,17,651	3,30,75,739
LAHORE			
Bet Jalendhar	26,51,788	27,29,019	
Bari	39,23,922	39,17,888	
Rachnao	26,84,134	26,48,216	
Chanhat	5,11,070	5,11,070	
Sindh Sagar	(9) 4,680*	94,680	
Total for the sūba	(98,65,594)	99,00,873	98,65,594
MULTAN			
Multan	54,94,236	3,36,694	
Dipalpur	20,79,170	21,58,168	
Bhakkar	6,00,419	6,03,419	
Total for the sūba	(81,73,825)	30,98,281	30,59,948
KABUL			
Kabul	1,37,178	1,12,710	

* The figure in the MSS is 4,680 dāms.

APPENDIX II

Number of Parganas in 'the Account of the Twelve Sūbas'

	Stated Totals sarkār-wise	Number of mahals actually listed
BENGAL		
Tanda	52	52
Gaur	66	66
Fatehabad	31	31
Mahmudabad	88	88
Khalifatabad	35	35
Bakla	4	4
Punea	9	9
Tajpur	29	29
Ghoraghat	84	84
Panjra	21	21
Barbakabad	38	38
Bazuha	32	32
Sonargaon	52	52
Silhat	8	8
Chatgaon	7	7
Sharifabad	26	26
Sulaimanabad	31	31
Satgaon	53	51
Madaran	16	16
ORISSA		
Jalesar	28	28
Bhadrak	7	7
Katak	21	21
Kaling Danpat	27	-
Raj Mahendra	16	-
Total for the sūba	781(787)	

The figure within square brackets is the total for parganas stated for the sūba.

	Stated Totals *sarkār*-wise	Number of *mahals* actually listed
BIHAR		
Bihar	46	46
Monghyr	31	31
Champaran	3	3
Hajipur	11	11
Saran	17	17
Tirhut	74	74
Rohtas	18	18
Total for the *sūba*	200 (199)	200
ALLAHABAD		
Allahabad	15	15
Ghazipur	19	18
Benaras	8	8
Jaunpur	41	40
Manikpur	14	14
Chunar	13	13
Battha Ghora	39	-
Kalinjar	11	11
Kora	9	8
Kara	12	12
Total for the *sūba*	181 (177)	
AWADH		
Awadh	21	21
Gorakhpur	24	23
Bahraich	11	11
Khairabad	22	22
Lucknow	55	54
Total for the *sūba*	133 (138)	131
AGRA		
Agra	33	32
Kalpi	16	16
Kanauj	30	30
Kol	21	21
Gawalior	-	13
Earach	16	16
Payanwan	21	27

contd....

	Stated Totals *sarkār*-wise	Number of *mahals* actually listed
AGRA (contd.)		
Narwar	5	5
Mandlaer	-	14
Alwar	-	43
Tijara	18	18
Narnaul	16	15
Sahar	6	7
Total for the *sūba*	(203)	257
MALWA		
Ujjain	-	10
Raisen	-	26
Garh	57	44
Chanderi	61	56
Sarangpur	24	24
Bijagarh	39	33
Mandu	16	15
Handia	23	23
Nadurbar	7	7
Mandsor	17	17
Gurgaun	12	12
Kotri Pirawa	10	10
Total for the *sūba*	(301)	277
BERAR		
Gavil	46	46
Punar	5	5
Kherla	35	35
Narnala	34	34
Kalam	31	22
Basim	8	8
Mahur	20	19
Manikdurg	8	7
Pathri	18	18
Telingana	19	19
Ramgar	5	5
Mehkar	4	4
Baitalwadi	9	9
Total for the *sūba*	242 (142)	231

	Stated Totals *sarkar*-wise	Number of *mahals* actually listed
GUJARAT		
Ahmadabad	28	28
Patan	16	16
Nadant	12	12
Baroda	4	4
Broach	14	14
Champaner	9	9
Surat	31	30
Godhra	12	12
Saurath	73	71
Total for the *sūba*	199 (198)	196
AJMER		
Ajmer	28	28
Chittor	26	24
Ranthambor	73	72
Jodhpur	22	19
Sirohi	6	5
Nagaur	31	31
Bikaner	11	11
Total for the *sūba*	197 (197)	190
DELHI		
Delhi	48	48
Badaun	13	13
Kumaun	21	21
Sambhal	47	47
Saharanpur	36	36
Rewari	12	12
Hissar Firuza	27	27
Sirhind	33	33
Total for the *sūba*	237 (232)	237
LAHORE		
Bet Jalendhar	60	60
Bari Doab	52	51
Rachnao	57	55
Chanhat	21	21
Sindh Sagar	42	39
Bairun Panjnad	-	3
Total for the *sūba*	(234)	229

	Stated Totals *sarkār*-wise	Number of *mahals* actually listed
MULTAN		
Multan	47	46
Dipalpur	29	29
Bhakkar	12	12
Total for the *sūba*	88 (88)	87
THATTA		
Thatta	18	16
Chachgan	11	11
Sehwan	9	9
Nasarpur	7	7
Chakarhala	8	8
Total for the *sūba*	53 (53)	51
....		
KASHMIR	38	37
KABUL	22	22

A G R I C U L T U R A L   P R O D U C T I O N

Chapter II

EXTENT OF CULTIVATION

I

At the very first sight, the extensive arāzi (area) statistics in the Āin-i Akbari provide us with a possible means of estimating the extent of cultivation at the close of the 16th century. The first requirement for this naturally is an assurance as to what the arāzi really represented. As a word, arāzi simply means land (as well as area). The Āin puts it as the heading for the column giving figures in terms of units of area (bighas, biswas) in its tables of the Twelve Provinces; but while giving sūba totals in its text, the Āin uses the words zaminda-paimūda, 'measured land', for the same set of figures.

We have had so far two views on the nature of the arāzi in these statistics. Moreland identified it with cultivated area or, rather, the gross-cropped area. He further assumed that such area had been fully measured in Akbar's time in all the regions for which the Āin furnishes arāzi statistics. Indeed, on this basis, he assumed an enormous extension in cultivation in Eastern Uttar Pradesh between 1595 and his own day, amounting to as much as forty fold in

certain tracts.[1] According to Irfan Habib, however, the ārāzi included not only the gross-cropped area, but also current fallows, cultivable waste and some portion of uncultivable waste.[2] He further argues that while the measurement was more or less complete in the sūbas of Agra and Delhi, a very large area remained unmeasured elsewhere, including the sūbas of Awadh and Allahabad.

These views can be tested by bringing in another known factor, the map-area. The map area of the various dastūr-circles lying within Uttar Pradesh, can be confidently determined, since almost all of the Āīn's parganas have been identified pretty firmly by Elliot and Beames[3] and by the authors of the District Gazetteers. I have measured the area from the sheets of Irfan Habib's Atlas of the Mughal Empire, which represents the latest effort in mapping the territorial divisions of Akbar's Empire.

Now, when one determines the map-area of the various dastūr-circles and compares it with the total ārāzi figures of

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1. W.H. Moreland, 'The Agricultural Statistics of Akbar's Empire', JUPHS, Lucknow, Vol. II, part (i), pp.1-39.

2. Irfan Habib, Agrarian System, pp.3 and 6 & n., notes that that cultivable waste is not a well defined category in modern statistics as well.

3. Elliot, Memoirs & c. of the North Western Provinces, ed. Beames, Vol. II, London 1869, pp.82-146 and 203-6; and J. Beames, 'On the Geography of India in the Reign of Akbar', part i, JASB, LII (1884), pp.215-32.

parganas comprising them, the ārāzī is found to exceed the map-area in certain circles. If Akbar's surveyors were not grossly at fault, this excess of the ārāzī over map-area can only be ascribed to the double count of the double cropped area (area raising both rabi and kharif crops).

While we have no record of the extent of double cropping in the 16th century, the double cropped area in the early years of the present century may serve us for the maximum limit. Modern land-use statistics are naturally available for modern territorial units, and these do not correspond with Mughal dastūr-circles. Nevertheless, one can still work out from them the extent of double cropped area within the territories of a dastūr-circle by use of a simple device: First, the extent of the double cropped area as per cent of the map area of the district, in which the larger portion of the dastūr-circle lays, has been determined. With this figure in hand, the modern double-cropped area of the corresponding dastūr-circle can be obtained by simply applying the ratio that the double cropped area bears to the map-area of the district, to the map-area of the dastūr-circle. In the following table, which shows three dastūr-circles in which the ārāzī exceeds the map-area, the per_centage stated in column c is based on the official Agricultural Statistics for the modern districts assumed by us to be true for the corresponding dastūr-circles.

Table I

A *Dastūr*-circle	B Excess of *ārāzī* over map-area (%)	C Double cropped area as % of map-area (1909-10)
Havelī Agra	2.08	6.41
Etawa	10.98	8.91
Meerut	11.12	18.94

We can see that we must assume that the *arazi* included the double cropped-area; otherwise its excess over the map-area would be inexplicable, even if one conceded to the Mughal surveyors an exceptionally large margin of error.

Moreland must, therefore, be right in his view that the *ārāzī* covered the gross, and not the net cultivated area. But the very fact that the *ārāzī* exceeded the map-area, also suggests that he was in error in equating the *ārāzī* with the gross-cropped area only, since the latter, even in recent times is substantially smaller than the map-area in most localities. Thus in the case of the three *dastūr*-circles in the above table, the *ārāzī* (as per cent of map-area of those circles) exceeds the gross cultivated area of the corresponding districts in 1909-10 (as per cent of the map-area of those districts) by a large margin.

Dastūr-circle	ārāzī as % of map-area (1595)	Gross-cropped area as % of map-area (1909-10)
Āgra	102.08	74.60
Etawa	110.98	59.99
Meerut	111.12	96.39

To reach such a high extent in relation to the map-area, the ārāzī should therefore not have only covered the gross-cultivated area (i.e. net area cropped plus the double-cropped area), but also portions of cultivable waste, current fallows and some part at least of uncultivable waste, which together made up the difference between net cultivation and total map-area.

This is corroborated by the detailed break-up given for the ārāzī in certain statistics surviving from the 17th century. The specimen taqsīm document found in an administrative manual, the Dastūr-ul ʿAmal-i ʿĀlamgīrī,[1] written about 1659, gives the following details of land surveyed in five villages.

		% of total area
Total area	2,943 bighas	100.00
Cultivable land	2,612	88.75
Cultivable waste	200	6.80
Uncultivable waste, and under habitation etc	131	4.45

1. Br. Mus. MS, Add. 6598, f.36b.

The inclusion as well as the low per centage of cultivable waste (6.80%) and area not available for cultivation (4.45%) may be noted.

Nainsi's _Vigat_, written during the reign of Jaswant Singh (1638-78)[1] gives the following figures for the area surveyed in _pargana_ Merta, _sarkār_ Nagaur. (This _pargana_ had been under Mughal Imperial Administration, and did not belong to the state of Marwar proper.)

		% of the total
Total measured area	26,15,965 _bigha_	100.00
Cultivable land	3,19,531	91.61
unassessed land	23,96,425	8.39

It is obvious from these figures that the measured land included some uncultivable waste, especially the area of village habitation sites, nullahs, etc. The small per-centage of the total measured area that the figures of the uncultivable waste represents, suggests that not the whole, but only a part of the actual waste was measured. It is, certainly difficult

1. _Marwar ra Pargana ri Vigat_, ed. N.S. Bhati, Jodhpur, 1969, Vol. I, p.77. Nainsi ascribes the survey to _samvat_ 1630 (A.D. 1572-3). This would, of course, suit my argument still better. But I have adopted the more conservative view that the figures themselves are based on a survey subsequent to that undertaken in Akbar's time. Cf. B.L. Bhadani for comments on these statistics in _Proc. Ind. Hist. Cong._, Aligarh Session (1975), pp.214-16.

to believe that the uncultivable waste in *pargana* Merta set on the fringe of the Thar Desert was only a little over 8% of the total area.[1]

In other area statistics, available from Eastern Rajasthan[2] the different categories of measured area are not properly indicated. For example, for 11 villages of *pargana* Antela Bhabhera of *sarkār* Alwar for the year 1649 we have the following data:

		% of total
Total measured area	61,180 *bighas*	100.00
Cultivable (*laik jarat*) land	39,822	65.09
Unassessed land (*sir* land, river, nullah etc.)	21,358	34.91

Here since the unassessed land includes *sir* which was unassessed though cultivated, it is not clear how much of the land in that category was actually uncultivable. Similarly, the per-centage of the uncultivable waste out of the total cultivable area cannot be established, though its presence within the measured area is again confirmed.

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1. Even in 1898-9 the proportion of land not available for cultivation was 14.7% of the total area. (*Agricultural Statistics*, 1897-8 to 1901-2, Part II, p.18).

2. I owe guidance on this material to Dr S.P. Gupta.

A *taqsim* document of 157 villages in *pargana* Amarsar of *sarkār* Nagaur (A.D. 1758), gives the following figures for surveyed land:

		% of total
Total measured area	1,20,610	100.00
Cultivable land	1,07,693	83.3
Unassessed land (*erigauti*, *kharera*, *nullah*)	12,917	10.7

Here again the uncultivated area and cultivable waste are lumped together. Though it is difficult to be certain about the significance of some of the terms used for categories belonging to unassessed land, it can perhaps be assumed that it here covered only uncultivated land. The area of measured land not available for cultivation in these villages could thus have hardly exceeded 10%, and might possibly have been much less.

Naturally the proportion of uncultivable waste in the total measured area varies considerably in these documents. Since this area was unassessable, it would normally have been of little use to survey it, unless it stood within the limits of the surveyed villages. On the basis of the documents we have studied, it would seem a safe assumption to set 10% of the total as the maximum limit for uncultivable waste included within the *ārāzī* or surveyed area.

While the inclusion of cultivable waste in the arāzī is certain, it is not possible to place a uniform limit for it. However, the ratio between the cultivable waste and cultivable land in the same localities in modern times (say 1909-10) may be used as a rough index for 1595.[1] At first sight this assumption seems a little bold, for one would think that with the extension of cultivation the culturable waste would decline, and, therefore, its ratio to gross-cropped area should be much higher in 1595 than in 1909-10. But some reflection would show that this is too simple a view. There is of course nothing or, rarely, anything like absolutely uncultivable land. At any time the land deemed cultivable is one which, at that time, is likely to offer returns if cultivated; that is, in other words, it lies at that time on the margin of cultivation. Thus, as with every increase of population, inferior land is brought under the plough, land which was previously considered uncultivable, because of the quality of its soil, lack of irrigation or difficulty of access, would tend to pass into the category of cultivable waste. In other words, the strip of cultivable waste would shift as the circle of cultivation expands; as it shifts, given a uniform width, its area should expand as the outer circumference becomes longer. The

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1. The figures for 1909-10 are drawn from the Agricultural Statistics, 1909-10.

cultivable waste should accordingly increase with any increase in cultivation. This is theory; but this is also precisely what we get by comparing the ratio of cultivable waste to gross-cultivation between 1909-10 and 1946-47 in those districts of U.P. where cultivable land (area under cultivation plus cultivable waste) was below 50% of the total area in 1909-10.

Table II.

District	Cultivated Land & Cultivable waste as % of map-area		Cultivable waste as % of gross-cultivation	
	1909-10	1946-7	1909-10	1946-7
Dehradun	25.21	38.54	62.66	76.34
Mirzapur	48.87	76.42	65.81	102.23
Almora	9.74	16.74	12.80	13.04
Garhwal	9.44	9.23	22.19	22.23
Nainital	27.02	32.22	48.63	146.35

There is, however, an important reservation to be made. Where the physical limits to extension in cultivation have been reached where, that is, cultivator has already covered a large portion of the total area, further increase in cultivation may not result in a transfer of a proportionate area from uncultivable to cultivable waste. We see this when we compare the ratio of cultivable waste to gross cultivation in those districts of U.P. where cultivable land was already 90% of the total area in 1909-10.

Table III

District	Cultivated & Cultivable waste as % of total area 1909-10	Cultivable waste as % of G.C. 1909-10	1946-7
Muttra	92.58	22.52	14.84
Etah	90.03	31.70	27.23
Bareli	90.14	11.47	14.98
Badaun	92.18	16.12	14.88
Moradabad	92.94	19.90	18.15
Shahjahanpur	91.79	25.16	29.29
Banda	91.32	82.56	57.70
Sitapur	90.02	20.93	19.54

In these districts, except for Bareli and Shahjahanpur, the cultivable waste as per cent of gross cultivation shows a definite decline.

Considering the possible situation in 1595, when in general cultivation was probably much less extensive than in 1909-10 in most areas, one would expect that in the areas covered in Table III, the ratio of cultivable waste to gross cultivation was higher than in 1909-10; on the other hand, in areas covered in Table II, the ratio in 1595 should have been lower than in 1909-10. But one must modify these conclusions by the reflection that whereas modern statistics are comprehensive, the Mughal surveyors are likely to have excluded cultivable

waste that was situated at a distance from the limits of villages surveyed by them. I have, therefore assumed that within the Āīn's ārāzī, the cultivable waste as per cent of Gross-Cultivation was about the same as early in this country in the corresponding area, except where cultivation was excessively low. The margin of error in this assumption is probably not large, except perhaps in some cases where the Āīn's ārāzī represents an exceptionally large per-centage of the map-area.

The next point to explore is whether measurement covered the entire cultivation or village lands, in all the parganas for which ārāzī figures are recorded in the Āīn. This can be done, first of all, by computing jamá/ārāzī (J/A) rates for different dastūr-circles, by dividing the total jama, or recorded revenue-income for all the parganas within a dastūr-circle by the total of their respective ārāzī figures. The results for some circles within the present state of Uttar Pradesh (U.P.) are shown in the table below.

Table IV

Dastūr-circle	J/A	J/A	Rates (Agra rate, = 100)		
		Agra=100	Wheat	Rice	Cotton
Agra	28.09	100	100	100	100
Etawa	11.25	40.05	89.98	74.02	102.75
Delhi	22.65	98.95	93.70	91.58	102.57
Meerut	11.12	39.59	86.70	79.66	102.57
Awadh	12.87	45.82	81.69	72.23	95.28
Bhadoi	50.22	178.78	96.66	70.38	105.14
Jaunpur	64.71	230.33	96.66	81.51	110.28
Chunad	54.68	194.66	96.66	81.51	110.28
Ghazipur	47.59	169.42	96.66	81.51	110.43
Rae-Bareilly	53.35	189.93	93.32	77.80	107.71

It can be seen at once that the variation in the incidence of jama' per bigha of ārāzī in the various dastūr-circles is considerable, ranging from 11.12 to 64.71. The differences among the dastūr-rates of these circles not only do not show such a range of variation; but also sometimes display change in an opposite direction, the rates being occasionally higher in areas where the jama' incidence is low. This is illustrated in the table by only three rates (wheat, rice and cotton); but these rates are fairly representative of the dastūr-rates for the various crops in general. There can, therefore, be little doubt that the variations in J/A are due to the varying extents to which the assesses land was measured in the different localities. This explains the high J/A in Eastern U.P. where measurement was backward. The exceptionally low J/A in some circles, on the other hand, can be attributed to a high proportion of waste included in the surveyed area.

Our conclusion, then, largely conforms to the suggestions made by Irfan Habib, that the ārāzī included land other than the land actually cultivated, and that the measurement in 1595, while complete or nearly complete in some areas was only partially carried out in others. For the latter view, he had adduced the evidence of the statistics of Aurangzeb's reign;[1]

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1. Irfan Habib, Agrarian System, p.4, reproduces these statistics The number of measured and unmeasured villages is separately given. The figures for the ṣūbas of Agra, Delhi, Awadh,

contd....

but as has been shown above, a close study of the Āīn's figures would also lead one to the same result.

To arrive at the gross cultivation (GC) in 1595 the ārāzī figures ought then to be scaled down to allow for uncultivable land as well as cultivable waste included in the measured area. As suggested above, 10% of the total ārāzī may be taken as the maximum limit for uncultivable waste. For allowing the cultivable waste, the ārāzī should be reduced at least by the ratio of cultivable waste to cultivable land in the corresponding districts in 1909-10 (with the exception of some areas of extremely low cultivation).

However, to apply the ratio from modern statistics one ought to be definite about the identification of the Āīn's parganas. As mentioned earlier, practically all the parganas situated within U.P., have been firmly identified; the same can

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(Contd)....... Allahabad, Gujarat and Lahore are as follows:

Sūba	Total	Measured	Unmeasured	Measured villages as % of total
Agra	30,180	27,303	2,877	90.47
Delhi	45,088	43,512	1,576	96.50
Awadh	52,691	33,842	18,849	64.23
Allahabad	47,607	45,345	2,262	95.25
Gujarat	10.370	6,446	3,924	62.16
Lahore	27,761	24,569	3,192	88.50

be said for Gujarat and Haryana. In the Panjab the number of identified parganas is rather small, but the limits of the Doābs, being set by the rivers (or their old courses that are still traceable), are more or less well established.

An attempt can thus be made to estimate the extent of cultivation, in those portions of Akbar's Empire, that fell within U.P. (the entire sūbas of Awadh and Allahabad, except the sarkār of Battha Gahora, most of sūba Agra and parts of sūba Delhi); the portion of the present state of Gujarat that corresponded to the sūba of Gujarat except sarkār Saurath; and Haryana and the Panjab, being covered by parts of sūba Delhi, the whole of the sūba of Lahore and part of sūba Multan.

II

Starting with U.P., I have proceeded on the basis of dastūr-circles each comprising a group of parganas, since these are the smallest units for which estimates of map-area can be made. The ārāzī has first been scaled down by 10% to allow for the portion of uncultivable waste. I have estimated the cultivable waste for each dastūr-circle by following the assumption already set forth, i.e. by calculating the ratio of cultivable waste to total cultivable land, in 1909-10 in the various districts within

which the dastūr-circle lay, and then applying this ratio to the ārāzī of the dastūr-circle to obtain an estimate of cultivable waste within it. The figure of ārāzī that we now get (A') should represent the area of gross cultivation in 1595. But this can only be true for the dastur circles where measurement was complete. Since 50 dāms could be the maximum incidence of land-revenue per bīgha of cultivation in this region,[1] measurement can be taken to be more or less complete in the dastūr-circles where the jamā per bīgha was below 50 dāms. For these dastūr-circles A' should be taken to be approximately the same as the gross-cultivation of 1595.

On the other hand, where the revenue incidence exceeds 50 dāms per bīgha of ārāzī one must assume that measurement was incomplete and A' represents only a portion of the gross-cultivation of 1595. In such cases, I have used the device of dividing J' (the jama figure, as modified by procedure set out in Chapter V)[2] by 35 - the average rate of revenue-incidence in this region being 35 dāms per bīgha.[3]

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1. See Chapter V.

2. The jamā reduced first by 10% to make allowance for taxes other than land revenue and then enhanced by 37%, for allowances and payments made from gross revenue collection.

3. See Chapter V.

These figures for the gross cultivation of 1595 can now be compared with the gross-cultivation of 1909-10. I have calculated the gross-cultivation of 1909-10 for the limits of dastūr-circles in the following manner: First of all, the entire gross cultivation of the district in which each dastūr-circle either wholly, or in the larger part, lay, has been obtained. Then the ratio of such cultivation to the total area of the district has been calculated. This ratio then has been applied to the map-area of the dastūr-circle, in order to yield the estimated gross cultivation for the area of that circle in 1909-10 (see Appendix I). For convenience of comparison acres have been converted into bīgha-i Ilāhī.[1]

However, certain dastūr-circles are too small for us to be reasonably sure of the accuracy of their map-area. The margin of error is naturally smaller in determining the map-area when the territory considered is larger. Most inaccuracies resulting from a possibly inaccurate delineation of the limits of individual dastūr-circles are mutually cancelled out if we combine adjoining dastūr-circles into bigger blocks. I have accordingly grouped the dastūr-circles lying in Uttar Pradesh into thirteen blocks. (The dastūr-circles within each block are listed in the Appendix I).

1. A bīgha-i Ilāhī has been taken to be 0.6 acre, on the basis of the evidence offered in Irfan Habib, Agrarian System, pp.354-62.

Table V

(A) Blocks	(B) Assumed G.C. in 1595 Bigha-i Ilāhī	(C) G.C. in 1909-10 Bigha-i Ilāhī	B as % of C
North west U.P.	63,75,289	78,45,901	81.26
Delhi	32,68,876	46,28,332	70.63
Rohilkhand	19,03,330	59,04,087	32.24
Middle Doab	21,57,448	28,90,488	72.19
Agra	21,25,267	21,62,269	98.29
Lower Doab (Jamuna)	25,57,334	30,73,038	83.20
Lower Doab (Ganga)	21,01,513	35,13,665	59.81
Lucknow	54,36,029	92,72,934	56.82
North East U.P.	12,67,719	28,90,255	43.86
Gorakhpur	5,41,024	96,13,041	5.63
East U.P.	34,09,939	79,88,890	42.68
Allahabad	35,67,268	49,15,193	72.57
Total	3,47,11,036	6,46,98,893	53.65

The table suggests that cultivation in 1595 was almost as high as in 1909-10 around Agra; about three-fourths of what it was in 1909-10 in Upper and Middle parts of the Doab; two-thirds in Lower Doab and some adjoining tracts, and about half or a little more in central U.P. It was less than half of the area under gross cultivation in Eastern U.P. in 1909-10; but in Gorakhpur, it seems to have amounted to a very low fraction. In the last named block, indeed, it is so low

that one may fairly doubt the accuracy of the Āin's jama' here.[1]

When put on the map (as in Map I) these estimates do not appear improbable. The areas where cultivation is low are precisely the areas in which forests were reported in Mughal times or are shown by Rennell in 1780, or where cultivation is known to have progressed substantially during the intervening period.[2]

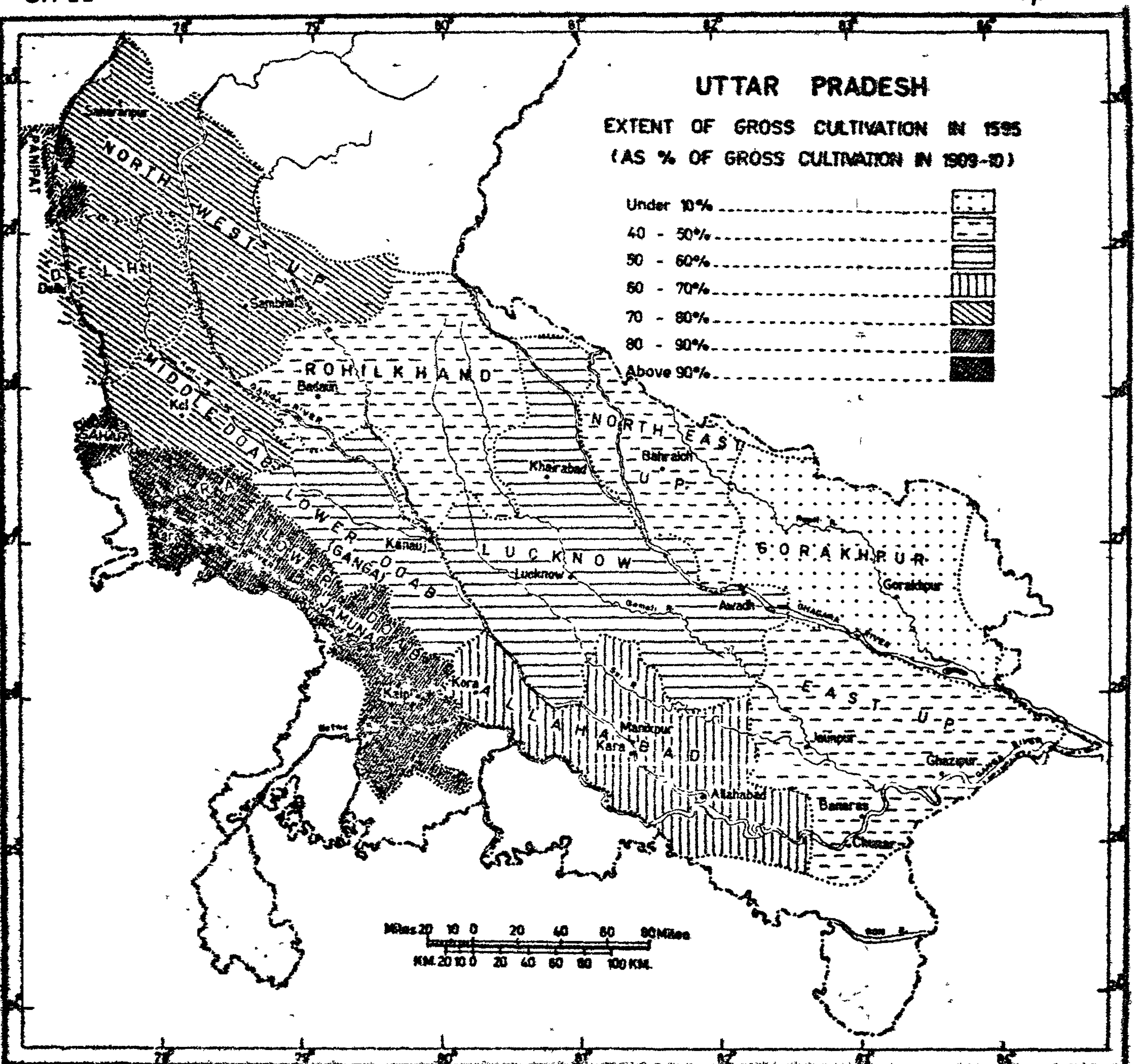
The total G.C. of 1595 for all the blocks may probably give a false sense of precision. But it suggests strongly that gross cultivation in 1595, over the entire region of Uttar Pradesh was probably a little over half of what it was in 1909-10. This estimate is higher than that of Moreland, but accords broadly with that of Irfan Habib.[3]

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1. This doubt is reinforced by the later revenue-statistics. Considered as per cent of the total jama' of Awadh, the jama' of sarkār Gorakhpur was 5.07 in the Āin. But it amounts to 11.85% of the total jama' of the sūba in the Dastūr-ul 'Amal-i 'Alamgiri, f.114a-b and 16.06% in the Chahār Gulshan. It is possible that part of the relative increase in the jama was due to an increase in cultivation in the intervening period; but it is more likely that the jama' was substantially understated in the Āin. If the latter was the case, we should perhaps, assume that the actual extent of cultivation here was twice or thrice the extent deduced from our Table V. In other words the G.C. in 1595 was probably about 15% of what it was in 1909-10.

2. Irfan Habib, Agrarian System, pp.11-16. See also Rennell, Bengal Atlas, sheet no.10 (forests shown by tree symbols).

3. Moreland, India at the Death of Akbar, pp.20-22; I. Habib, Agrarian System, pp.12-15.


UTTAR PRADESH
EXTENT OF GROSS CULTIVATION IN 1595
(AS % OF GROSS CULTIVATION IN 1909-10)
Under 10%
40 - 50%
50 - 60%
60 - 70%
70 - 80%
80 - 90%
Above 90%
NORTH WEST U.P.
DELHI
Delhi
PANIPAT
Saharanpur
Sambhal
MIDDLE DOAB
Koil
ROHILKHAND
Badaun
NORTH EAST U.P.
Bahraich
Khairabad
LOWER DOAB (GANGA)
Kanauj
LUCKNOW
Lucknow
GORAKHPUR
Gorakhpur
Awadh
EAST U.P.
Jaunpur
Ghazipur
Banaras
Chunar
ALLAHABAD
Manikpur
Kara
Allahabad
Kora
Kalpi
Miles 20 10 0 20 40 60 80 Miles
KM. 20 10 0 20 40 60 80 100 KM.

III

From Uttar Pradesh we pass on to Gujarat. For this province the Āīn's record of ārāzī is strikingly complete, except for the sarkār of Saurath and the tracts of Cutch and Lesser Cutch (Jamnagar). Out of the remaining eight sarkārs, the ārāzī is recorded against all the parganas under the sarkārs of Patan, Nadaut, Baroda, Champaner, Surat and Godhra. In the sarkār of Broach, the ārāzī is not recorded in two parganas viz., Bandar (port) Gandhar and the seat of the headquarters, Broach itself. It is possible that in both cases, the pargana, or rather mahal, being purely urban, there was no agricultural land to be brought under measurement. Finally, in sarkār Ahmadabad, out of a total of 28 parganas, 5 have no ārāzī mentioned against them; but of these five one is definitely a port (Bandar Ghogha).[1]

The total ārāzī as recorded in the Āīn is 47.60%[2] of the map-area of the corresponding portion of the sūba. It amounted to 85.62% of the gross cultivation at the beginning of this century in the corresponding territory, as calculated from modern official statistics (for which see below).

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1. Bandar Ghogha is wrongly read 'Bandar Sola' in Blochmann's text, as well as MSS, the kaf-strokes having been omitted.

2. As explained in Chapter I, I have used the totals of the Āīn's figures for individual mahals, which, here and quite often elsewhere, are different from the Āīn's sarkār totals, which again differ from its own recorded total for the sūba. The differences for Gujarat as a whole are, however, not substantial:

Stated sūba total	Total of recorded sarkār figures	Total of mahal figures
1,69,36,377-3	1,69,35,877-3	1,72,27,235

In spite of its extensive _arazi_ statistics, the _Ain_ declares that Gujarat was mostly "_nasaqi_" and measurement was rarely carried out.[1] But this statement may mean only that the figures of land measured once, continued to be accepted in subsequent years (which was a recognised form of _nasaq_)[2] without recourse to annual measurement. Since we are not in any case considering annual fluctuations in cultivation, this does not deprive the Gujarat figures of their value for the particular purpose of comparing them with figures of three hundred years later.

It has, however, to be tested whether measurement in Gujarat covered all the cultivated area. One can test this by working out the ratios of _jama/arazi_ (J/A) and _jama_/map-area (J/M) as well as the ratio of _arazi_ to map-area, for the different _sarkars_. (There were no _dastur_-circles in Gujarat). The results of these simple calculations are given below:

Table VI

(A = _Arazi_; J = _Jama_; M = Map Area)

Sarkar	J/A	J/M	A as % of M
Ahmadabad	25.90	14.90	57.55
Patan	15.17	7.29	48.04
Nadaut	16.28	4.53	27.85
Baroda	44.63	32.97	73.83
Broach	22.95	9.42	41.02
Champaner	13.13	2.58	19.62
Surat	14.53	8.38	57.69
Godhra	6.83	2.00	29.24

1. _Ain_, I, p.556.
2. Irfan Habib, _Agrarian System_, p.225.

The key figures in this table are those of sarkār Baroda, where A (ārāzī) approaches three-fourths of M (total map area). In this sarkār J/A amounted 44.63 dams per bīgha of map-area. It is evident, therefore, that in all the sarkārs, where J/A is lower than even 32.97 dāms (J/M of sarkār Baroda), measurement ought to be assumed to be complete. This in fact is the case with all the other sarkārs; and we must infer that the cultivated area in the various sarkārs had been almost fully brought under measurement.

Applying now the same assumptions that we have ventured for Uttar Pradesh, we can work out the gross cultivation in Gujarat at end of the 16th century, from its ārāzī figures. The assumptions are that (a) up to 10% of the ārāzī comprised land then not available for cultivation; and (b) the per centage of cultivable waste and current fallows in the total ārāzī (less 10%) was about the same as the proportion that the two categories bore to the aggregate of cultivated and cultivable area at the beginning of this century (we have taken 1903-4 figures for Gujarat for this purpose).[1]

1. Since in Gujarat large areas were under princely states, which did not offer the necessary returns, the Agricultural Statistics are not complete in the earlier years. I have supplemented their information by estimates found in the Imperial Gazetteer (Oxford, 1910) whose evidence relates to 1903-4.

To apply the second assumption, I have followed a procedure which requires some explanation. The Āīn's sarkārs do not correspond to the British districts and 'native states'. Therefore to get the ratio of cultivable land within the territory of a sarkār, I have first measured the part of a district which falls under that sarkār. Then its ratio to the total area of the district has been obtained. Thereafter the figures of total cultivable land, and cultivable waste for the whole district have been reduced in the proportion which the part of the district, covered by the sarkār in question, bears to the total area of the district. Proceeding in this way for the portions of all the districts which together constitute one whole sarkār, we get the cultivated land and cultivable waste for the entire territory of the sarkār in 1903-4. These figures naturally enable us to work out the per-centage of cultivable waste to the total area available for cultivation, in that sarkār, which, under our assumptions, could be true for 1903-4 as well as c.1595.

The ārāzī (less 10%) of the sarkār can now be scaled down by the per centage so determined, to get the gross cropped area (A') for c.1595. The following table gives the ārāzī recorded in the Āīn and the estimated gross cultivation of the time, arrived at by us.

Table VII

Sarkār	A (ārāzī)	A' (Gross cultivation c. 1595)
Ahmadabad	84,19,201	56,77,404
Patan	38,45,909	22,99,392
Nadaut	5,40,425	4,28,951
Baroda	9,22,212	7,10,103
Broach	9,49,731	7,97,403
Champaner	8,00,328	4,60,269
Surat	13,09,614	9,99,301
Godhra	5,34,815	3,49,223
Total	1,73,22,235	1,17,22,064

The estimated gross-cropped area in all the sarkārs of Gujarat except Saurath thus amounts to 67.671% of the total measured area. In other words, we have assumed that 32.329% of the total measured area was covered by waste, cultivable as well as uncultivable.

While adopting this conclusion, one faces an apparently disordant note in the Mirʾāt-i Ahmadī. This work states that the total measured area of Gujarat (excluding the sarkārs of Saurath and Godhra) was in Akbar's time 1,23,60,594 bighas and 9 biswas

of which 83,47,498 bighas 3 biswas were cultivable.[1] These figures imply that of the total measured are 67.53% was cultivable and 32.47% of uncultivable. The attribution of these figures to Akbar's time is probably a mistake; the figures accord more with those of Aurangzeb's time when a large number of villages in Gujarat had not yet been measured.[2] Even so the evidence is quite puzzling, for it is hard to believe that the Mughal surveyors measured such a big portion of uncultivable land that was unassessable and useless for their purpose.

On the other hand if we assume that the Mirāt has erroneously used the word 'cultivable' for land actually cultivated it would offer surprisingly close support to our conclusion and hence to our two assumptions. Under our assumptions the per centage of gross cropped area to the total ārāzī would be exactly 67.67; and the Mirāt (as interpreted by us) has put it at 67.53%.

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1. Mirāt-i Ahmadī, ed. Nawab Ali, Vol. I, Baroda, 1927, p.25.

2. In Aurangzeb's reign out of a total of 10,370 villages only 3,924 were measured, and the measured area amounted to 84,99,582 bīgha-i Ilāhī (Fraser 86, ff.57b-60b). The Āīn's measured area for all the sarkārs (excluding Saurath) was 1,73,27,235 bighas, and (excluding Sarkār Godhra as well), 1,68,62,925 bighas.

There is another interesting piece of information coming from *pargana* Broach in 1776.[1] This comes from the report of the English Revenue Collector sent to collect revenue during a temporary cession of the *pargana* to the English by the Marathas. According to this report, 50.691% of the total measured area within the pargana was actually cultivated. The low per centage might have been due to the abnormal conditions then obtaining in the area; the collector, in any way, speaks of the year as one in which much less had been produced than in the preceding year.[2]

On the whole, then it would seem that in Gujarat about two-thirds of the total measured area (*ārāzī*) can be taken to have been actually cultivated.

The gross-cropped area of different *sarkārs* at the close of the 16th century can now be compared with the gross-cultivated area in 1903-4.

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1. *Selections from the Letters, Despatches and Other State Papers, Preserved in the Bombay Secretariat*, ed. George W. Forrest, Vol. II, Bombay, 1887, pp.179-85.

2. In this *pargana* according to the same collector, even in this very year, a much higher portion of the measured land was actually cultivated, in lands held revenue free or on special tenures. The per centage was as high as 83.18% in the 'Garshiya' lands, 74.01% in the 'Germia' and 'Valluddenrial' lands and 85.67% in the 'Pusayta' lands. (*Ibid.*, pp. 183-5).

To get the gross-cultivation in 1903-4 in the regions of different *sarkārs*, I have proceeded in the same way as for estimating the cultivable waste and gross-cultivation. The figures of gross-cultivation for the various districts have been reduced in the proportion which the area of the part of each district coming under a *sarkār* bears to the total area of the district. Building up figures for all the parts of different districts that make up the whole or larger part of one *sarkār* we get the ratio of the gross-cultivation in 1903-4 to total area of the *sarkār*. Since some small areas within the *sarkār* lie outside the districts/states for which we have information, we have taken the ratios of gross-cutlivation to the total area in the reporting territory within each *sarkār*, and have applied it to the map area of the whole *sarkār*, to obtain our estimate of gross-cultivation for 1903-4. Acres have been converted into *bīgha-i Ilāhī*.

Table VIII

Sarkār	(a) G.C. in c.1595 (*bīgha-i Ilāhī*)	(b) G.C. in 1903-4 (*bīgha-i Ilāhī*)	(c) (a) as % of (b)
Ahmadabad	56,77,404	83,33,534	68.13
Patan	22,99,392	50,14,571	45.85
Nadaut	4,28,951	5,30,173	80.91
Baroda	7,10,103	8,04,229	88.30
Broach	7,97,403	18,59,194	42.89
Champaner	4,60,269	16,12,665	28.54
Surat	9,99,301	11,34,406	88.00
Godhra	3,49,223	9,40,820	37.13
Total	1,17,22,604	2,02,29,592	57.945

The table shows that the ratio of GC c.1595 to GC in 1903-4 varies considerably from tract to tract (see Map II). In Baroda and Surat the GC in 1595 approaches nearly 9/10ths of that of 1903-4; but it is only about one-third in Godhra and a little over a quarter in Champaner. Such variations are plausible in that both the Champaner and Godhra sarkārs contained hilly territory, then covered by forests. The high level of cultivation in 1595 in sarkār Surat is a little surprising since it contained timber forests famous for long afterwards for their teak used in building ships. The general result that emerges from these figures is that the area under cultivation in Gujarat c.1595 in comparison with the area during the first decade of this century was a little above that in Uttar Pradesh, but within the same range - i.e. between one-half and three-fifths.

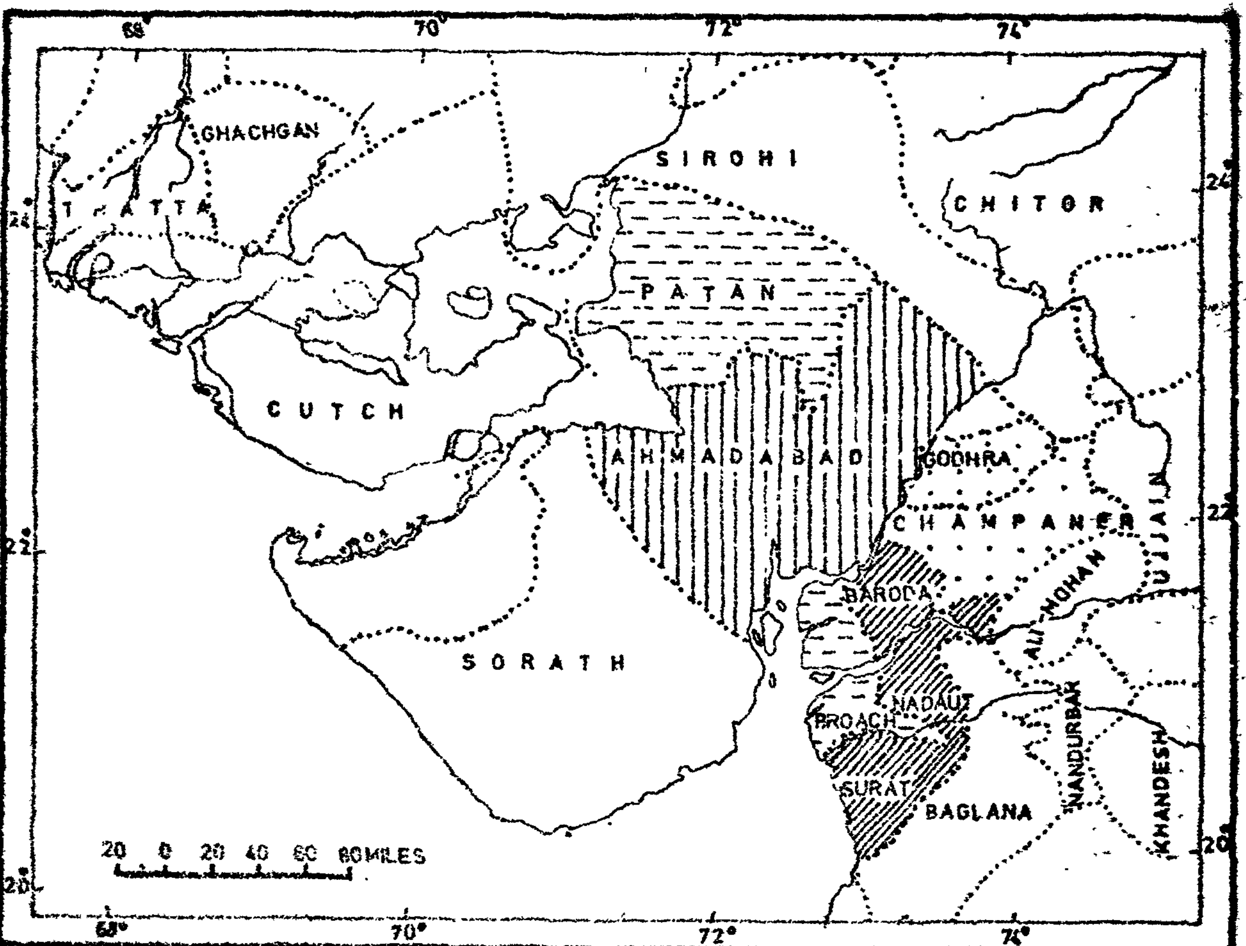
My estimate for the total GC in 1903-4 for the area of the given sarkārs of Gujarat is 2,02,29,592 bīghas (Ilāhī), while the total arazi of these sarkars was 1,73,22,235. Presumably because of this high ratio of the ārāzī to C.C. at the beginning of this century, Irfan Habib has been led to say that "when we compare the Āīn's area with the modern returns of cultivable area from the corresponding territory, the difference in favour of the latter is found only to be slight.[1] This is not

1. Irfan Habib, Agrarian System, p.19.

G U J A R A T

Extent of Gross Cultivation in 1595

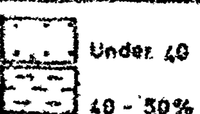
(As % of Gross Cultivation in 1909-10



Ch II


Under 40

40 - 50%


60 - 70%

80 - 90%

Map II

however, borne out by our calculations; and this may partly be due to some difference in the limits assigned to the different sarkārs. Our own finding, as developed above, is that the actual level of cultivation in Gujarat, c.1595, was less than three-fifths of what it was in 1903-4.

IV

Another region for which ārāzī statistics are given in the Āʼīn in detail sufficient for us to attempt a comparison with modern land-use data, is the old British province of the Panjab, (excluding, however, its Hill States). This corresponded roughly to the portions of the Mughal ṣūba of Delhi lying west of the Yamuna; the ṣūba of Lahore (excluding the hill territories); and the ṣūba of Multan (excluding the sarkār of Bhakkar).

The extent of measurement in the ṣūba of Delhi west of the Yamuna (henceforth designated Eastern Panjab) can be judged from the jamaʻ: ārāzī and ārāzī : map-area ratios, worked out below:

(A=Ārāzī; J=Jamaʻ; M=Map area)

Sarkār	A as % of M	J/A
Rewari	90.16	24.94
Hissar Firuza	22.09	17.15
Sirhind	62.22	20.79
Delhi (West of Jumna)	89.49	14.46

Since the ārāzī in sarkār Rewari was over 90% of its total area, it follows that measurement was practically complete here. The J/A of this sarkār (24.94 dāms/bīgha) can therefore be taken to represent normal level for areas where measurement was complete. Thus in any sarkār where J/A is about or less then, 24.94 dāms per bīgha, measurement of assessable land may be considered to have been complete. Significantly, this is the case in all the sarkārs, comprising East Panjab; and we can thus assume with a reasonable degree of confidence that in this area little cultivated land was left unsurveyed in the time of the Āīn.

To keep to a minimum the chances of error arising out of matching the British districts and native states, on the one hand, with the individual Mughal sarkārs, on the other, the whole of East Panjab has been treated as one block for working out the GC for 1595 from the ārāzī figures. For this, the ratios of gross-cropped area to the total map area (GC/M) and cultivable waste to total cultivable land (CW/C) in 1909-10 have been calculated for all the corresponding districts together. From this we get the gross cropped area in 1595, according to two assumptions already explained, viz., reducing the ārāzī by 10% to allow for uncultivable waste and then scaling it down in the same proportion as borne by cultivable waste (CW) to total cultivable land (gross cultivation plus

cultivable waste) in 1909-10. The reduced figure is treated as equivalent to G.C. for 1595. Since the limits of the Mughal sūba of Delhi west of the Yamuna do not exactly correspond to the British east Panjab (excluding Hill States), the G.C. for 1909-10 for the Mughal limits has been estimated by multiplying the latter's map-area by GC/M of the British limits. The final results are as follows (in bīgha-i Ilāhī):-

(a)	(b)	(c)
GC in 1595	GC in 1909-10	(a) as % of (b)
1,22,49,686	2,74,01,085	44.705

The sūba of Lahore (excluding the northern hilly belt), constituting the second block ('west Panjab' comprising all territory west of the Sutlej) displays a far more complex situation than East Panjab, and the comparative data for each of the five Doābs comprising it have to be examined separetely.

For the territories of the British districts roughly corresponding to each doāb, the CW/C and GC/M have been worked out for 1909-10. Following our standard assumptions, I have allowed 10% for uncultivable waste and then reduced the remaining ārāzī of each doāb by CW/C of 1909-10 in the corresponding British districts.

If the measurement was complete, this modified ārāzī (A') should be equal to the gross-cropped area in 1595. On the

other hand, by applying the GC/M of the corresponding British districts to the map area of each doāb, we get the estimated gross-cropped area of the latter for 1909-10. If the gross land revenue (J')[1] of each doāb is now divided by A' we should get the gross revenue realization per bigha, of actual cultivation. The figures so obtained are set out below.

Table IX

Doābs[2]	A'	GC	A' as % of GC	J'/A'
Bet Jalandhar	30,12,640	33,47,546	90.00	57.10
Bari	28,32,560	34,82,323	81.34	67.67
Rachnao	22,74,563	59,41,830	38.28	104.37
Chhanhat	12,57,143	27,47,143	45.76	68.31
Sindh Sagar	5,22,262	1,65,14,975	3.42	129.82

In the Bet Jalandhar, Doāb , A' in 1595 was 90% of GC in 1909-10; in the Bari Doāb, it was 81.34%. It will be a fair assumption, then, that in both these doābs measurement was more or less complete in 1595. The incidence of land-revenue per bigha of cultivation is nearly 57 dāms in Bet

1. As worked out in Chapter V.

2. The hilly region has been excluded from all the Doābs.

Jalandhar and about 68 dāms in Bari. These figures would then give us the range, to be expected where A' represented the gross-cropped area of 1595. But in those doābs where J'/A' is substantially above these figures, A' cannot possibly be taken as representing the entire gross-cultivation. Such *is the position in the Rachnao and Sindh Sagar Doābs. For* these doābs the gross-cropped area must then be worked out by dividing the total land-revenue J' by 57.10 (i.e. the ratio J'/A' in Bet Jalandhar).

The range for J'/A' as well as its lower limit (57.10) in West Panjab, is higher than in U.P. But this seems plausible since even the gross land-revenue per bigha of map-area was higher in this region than in U.P.[1]

That J'/A' of the Bet Jalandhar Doāb can be used for this purpose is supported by the existence of a curious fact, viz., the use of a certain ratio of J/A by the Mughal administration for filling in ārāzī figures for certain mahals. In 16 maḥals in Bet Jalandhar, 5 in Rachnao, 3 in Chanhat, and 15 in Sindh Sagar Doāb, round figures of jamaʿ are accompanied by detailed ārāzī figures. Closer scrutiny reveals that the ārāzī figures are not the results of survey,

1. Vide Chapter V.

but simply determined by dividing the jama' figures by about 39.8 (and in the case of Sindh Sagar Doāb, uniformly, 41.2).[1] Clearly, then the Mughal officials thought that every 40 dāms or so of jama' presupposed a bigha of ārāzī in the Panjab doabs. This happens to be surprisingly close to the actual jama':ārāzī ratio in the Bet Jalandhar Doāb which works out to 37.6:1.

WE can, therefore, take it that the ratio between J' and A' of Bet Jalandhar Doāb (plains mahals) can be used with some confidence to work out the A' of those portions of the Panjab where the Mughal survey was manifestly incomplete.

Our estimates of G.C. in 1595 recalculated on the above basis for the various doābs would then be as follows:

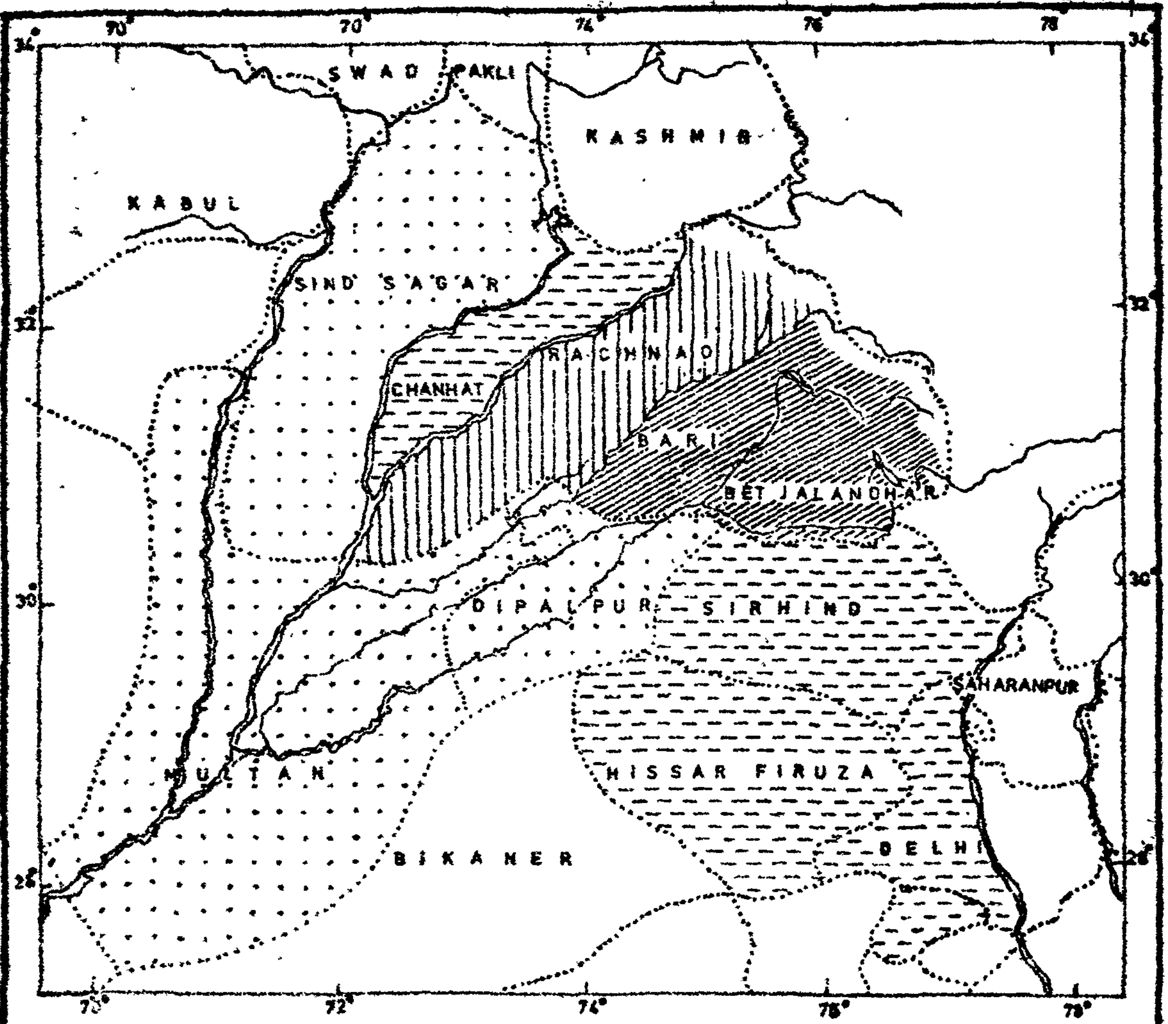
Table X

Doāb	A GC 1595	B GC 1909-10	C A as % of B
Bet Jalandhar	30,12,640	33,47,546	90.00
Bari	28,32,506	34,82,323	81.34
Rachnao	41,64,715*	59,41,830	70.09
Chhanhat	12,57,143	27,47,058	45.76
Sindh Sagar	12,87,847*	1,65,14,975	7.80
Total	1,25,54,851	3,20,33,732	39.19

See Map III

1. See Appendix II for an examination of these statistics.

* Gross cropped area calculated from gross land-revenue.


PUNJAB
Extent of Gross Cultivation in 1595
(As % of Gross Cultivation in 1909-10
SWAD
PAKLI
KASHMIR
KABUL
SIND SAGAR
RACHNAO
CHANHAT
BARI
BET JALANDHAR
DIPALPUR
SIRHIND
SAHARANPUR
MULTAN
HISSAR FIRUZA
BIKANER
DELHI
Under 40
40 - 50%
60 - 70%
80 - 90%
Faiz Habib



While the results for all the doabs lie within the range of probability, the Doab Sindh Sagar, forms an exception with an impossibly low figure for the gross-cultivated area. There could be two reasons for this low per-centage in this particular case: Either most of the area was really uninhabited and uncultivated or the Mughal control over the doab was largely theoretical and the jama' recorded was inordinately low. The second alternative seems more likely since this was the region of the powerful Ghakkar zamindars. Significantly enough the jama' in 17 out of a total of 39 parganas is in round figures(rounded to thousand and above) suggesting a fixed revenue claim, presumably on a concessional basis.

In the two sarkars of Multan and Dipalpur belonging to suba Multan and comprising our third block of Southern Panjab, the arazi is only 4.54% of the map-area. Even if we exclude the Bairun Panjnad and Sindh Sagar Doab of the Multan sarkar, the measured area of the block comes to less than one-tenth of the map-area. This means that arazi here can be of little help in estimating the extent of cultivation. However, the gross-cropped area may possibly be estimated from the jama' statistics. It is difficult to get the incidence of land-revenue in this region; nevertheless we can apply the limit that we have set for the adjoining block of West Panjab; i.e. 57.10 dams per bigha. The gross-cropped area of 1909-10

can be estimated by calculating the GC/M for the districts covering bulk of the area of the two sarkārs (excluding Sindh Sagar and Bairun-i Panjnad of sarkār Multan), and applying this ratio to the map-area of the block. The resulting estimates are as follows:

(a)	(b)	(a) as % of (b)
G.C. in 1595	G.C. in 1909-10	
27,82,953	1,09,74,007	25.36

This indicates an exceptionally low GC for 1595; but this is not entirely surprising. The block contained the famous Lakhi Jungle;[1] and it is also possible that the irrigation from modern British canals has considerably extended cultivation here. According to the official Agricultural Statistics, 1909-10, the area irrigated by canals in the districts of Ferozepur, Montgomery and Multan (corresponding roughly to the Mughal territory in question) amounted to 52.3% of the total gross-cultivation.

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1. For which see, Sujan Rao Bhandārī, Khulāsatut Tawārīkh, ed. Zafar Hasan, Delhi, 1918, p.63.

V

An estimation of the extent of cultivation in other parts of Akbar's Empire does not seem immediately possible. For large areas the Āīn offers no ārāzī statistics at all, as in the case of the sūba of Bengal and parts of Bihar[1] and Ajmer. In other territories the ārāzī recorded is so small (e.g. hardly 12% of the map-area in Malwa) that it seems almost certain that the measured area covered only a fraction of the area under cultivation.

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1. The Āīn offers ārāzī statistics for all sarkārs of Bihar, except Monghyr; but they are uniformly low and in most cases, nominal. Under sarkārs of Monghyr no ārāzī figures are furnished for any pargana whatsoever. It is, therefore, rather surprising that there should exist 'Raqba-bandi documents of Akbar's Reign' from pargana Bhagalpur of this sarkār, which B.R. Grover has introduced in Indian Historical Records Commission, Proceedings, Volume XXXVI, Part ii, pp.35-60. It seems, from Grover's own description, that the documents belong to that class of 18th century revenue literature where everything was ascribed to Todar Mal. The documents are titled 'Raqba-bandi Todar Mali 1001 Fasli wa Tappah-bandi'. Todar Mal had died three years before 1001 Fasli; and so the ascription of the figures to him is simply out of ignorance. The name of some tappas like Azimnagar, Shuja nagar, Azimabad, also suggest a later date since these places were obviously named after Princes Shuja and Azimush Shan. Satisfaction is expressed by Grover that this document allegedly of 1593, and another of 1771, "enumerate the same tappahs along with their respective mauzas, even though with a gap of 178 years of record (sic)" (ibid., p.55). The identity of contents surely proves, if nothing else, that the "gap of 178 years" is illusory.

Even to work out a rough estimate on the basis of *jamaʿ* figures, dispensing with the *ārāzī* altogether, as we have done for certain areas, would be too risky an exercise. The incidence of *jamaʿ* for different regions cannot be determined, and it may vary largely from region to region depending upon the price-level, productivity of land, crop-pattern and degree of Mughal administrative control. Some areas too might have been held on concessional rates as was probably the case, for example, with the *dastūr*-circle of Amber in *ṣūba* Ajmer.[1] In some tracts, again the gross-cultivation in the early years of the present century in the corresponding territory is not easy to establish, due to the problem of the identification of the *Āʾīn*'s *parganas* and the resulting difficulty in using modern land-use statistics.

However, it may not be very wrong to generalize from the results we have obtained for U.P., Gujarat and Panjab. These regions together covered about 31% of the total area and contained 32% of the population (on the basis of 1911 census) of the territories of the Mughal Empire

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1. See Chapter IV.

(excluding the sūba Kabul, but including the sarkār of Kashmir).

Quite naturally, within these three regions, the extent of cultivation varied: Parts of it had as high a cultivation in 1595 as 98% of that of 1909-10 (the Agra block) and as low (though rather dubiously) as 6% (Gorakhpur block): But when larger areas are considered, the range is found to be between two-fifths and three-fifths of the gross-cultivation of the early years of this century.

If we then take U.P., Gujarat and Panjab together and compare the gross-cultivation c.1595 with c.1910, we get the following picture (figures in bīgha-i Ilāhī).

	A G.C. in 1595	B G.C. in 1909-10	A as % of B
U.P.	3,47,11,036	6,46,98,893	53.65
Gujarat	1,17,22,604	2,02,29,592	57.945
Panjab	2,75,87,490	7,04,08,824	39.182
Total	7,40,21,130	15,53,37,309	47.74

One may, therefore, hazard the conclusion that at the close of the 16th century the area of gross-cutlivation in Akbar's Empire was somewhere around half of what it was at the beginning of this century.

There is, however, one important reservation. We have assumed, while arriving at our figures, that the Mughal officials included uncultivable waste to the extent of 10% of the entire measured area; and that they measured as much of cultivable waste in proportion to gross-cultivation as has been done by modern surveyors. The assumptions probably overstate the coverage of these categories in Mughal statistics. Our estimate of GC for 1595 may, therefore, be an underestimate in the same proportion. It is, therefore, likely that the actual GC in 1595 was higher than 50% of GC at the beginning of this century. It could, for example, well reach 53 to 55%, if we set the possible margin of error at 10 or 15%. It is unlikely, however, that it could have gone much beyond these levels.

Appendix I

GROSS-CROPPED AREA BY DASTŪR-CIRCLES

Note: Calculations of Gross Cropped Area are according to methods explained in Chapter II.

Dastūr-circle	Sarkār	Sūba	Gross Cropped Area 1595	Gross Cropped Area 1909-10
North West U.P.				
Deoband	Saharanpur	Delhi	20,34,333	22,29,465
Sardhana	,,	,,	5,90,602	6,12,370
Chandpur	Sambhal	,,	10,31,021	10,87,223
Sambhal	,,	,,	19,74,562	26,03,658
Lakhnaur	,,	,,	5,26,579	11,72,209
Kairana	Saharanpur	,,	2,18,192	1,40,976
Total			63,75,289	78,45,901
Delhi				
Delhi	Delhi	Delhi	14,80,307	24,50,073
Meerut	,,	,,	11,96,158	13,10,590
Baran	,,	,,	5,92,411	8,67,669
Total			32,68,876	46,28,332
Rohilkhand				
Badaun	Badaun	Delhi	13,62,064	50,05,895
Bharwara	Khairabad	Awadh	19,752	4,06,174
Pali	,,	,,	5,21,514	14,92,018
Total			19,03,330	59,04,087

Middle Doab

Thana Farida	Kol	Agra	5,71,831	13,20,210
Akbarabad	"	"	3,55,714	4,49,354
Kol	"	"	6,73,556	8,08,113
Marahra	"	"	3,14,067	2,42,588
Sikandarpur Atreji	Kanauj	"	2,42,280	70,223
Total			21,57,448	28,90,488

Agra

Agra	Agra	Agra	21,25,267	21,62,269

Lower Doab (Jamuna)

Etawa	Agra	Agra	13,15,155	10,88,003
Phaphund	Kanauj	"	2,21,952	2,69,460
Kalpi	Kalpi	"	10,20,227	17,16,375
Total			25,57,334	30,73,838

Lower Doab (Ganga)

Sakit	Kanauj	Agra	3,32,824	5,69,992
Bhogaon	"	"	11,35,451	16,68,350
Kanauj	"	"	6,33,238	12,75,323
Total			21,01,513	35,13,665

Lucknow				
Khairabad	Khairabad	Awadh	8,34,522	20,48,825
Unam	Lucknow	,,	5,42,901	8,67,395
Lucknow	,,	,,	19,50,369	37,33,943
Ibrahimabad	Awadh	,,	14,040	78,000
Awadh	,,	,,	20,40,478	25,20,718
Kishni	,,	,,	54,719	24,053
Total			54,36,029	92,72,934
North East U.P.				
Bahraich	Bahraich	Awadh	11,60,319	26,08,842
Firuzabad	,,	,,	1,07,400	2,81,413
Total			12,67,719	28,90,255
Gorakhpur				
Gorakhpur	Gorakhpur	Awadh	4,87,295	90,97,370
Khuransa	Bahraich	,,	53,729	5,15,671
Total			5,41,024	96,13,041
East U.P.				
Jaunpur	Jaunpur	Allahabad	22,49,547	53,33,617
Benaras	Benaras	,,	3,62,020	5,39,938
Chunar	Chunar	,,	2,37,419	14,15,454
Ghazipur	Ghazipur	,,	5,60,953	6,99,881
Total			34,09,939	79,88,890

Allahabad

Jajmau	Kora	Allahabad	2,05,523	2,47,158
Kara	Kara	,,	8,54,489	11,19,832
Kurtia	Kora	,,	78,766	1,92,307
Kora	,,	,,	4,26,485	5,92,832
Rai Bareily	Manikpur	,,	3,71,189	5,63,956
Manikpur	,,	,,	9,94,115	14,22,047
Ghiswa	Jaunpur	,,	42,641	31,532
Bhadoi	Allahabad	,,	5,94,060	7,45,529
Total			35,67,268	49,15,193
Grand Total			3,47,11,036	6,46,98,893

Appendix II

NOTE ON CERTAIN ĀRĀZĪ STATISTICS FROM SŪBA LAHORE

The jamaʿ-ārāzī statistics of the suba of Lahore contain a curious peculiarity: Here in a number of mahals belonging to the doabs of Bet Jalandhar, Rachnao, Chhanhat and Sindh Sagar the ārāzī stands in a practically fixed ratio to the jamaʿ. In the case of mahals in the first three doābs it is around 39.8 dāms; and in the Sindh Sagar Doab, it is exactly 41.2 (barring the mahal of Bel Ghazi Khan where J/A is 41.32). Against most of these parganas (31 out of a total of 39) the jamaʿ is given in round numbers (rounded to 1000 and above). Suyūrghāl figures are not entered against any of these mahals.

Table (next page)

One can easily see that in these parganas the ārāzī was not actually measured but has been worked out from the jamaʿ figures by assuming a fixed incidence of the 'jamaʿ per bigha of ārāzī. It is of course inconceivable for the reverse to have happened, i.e. for the jamaʿ to have been worked out from the ārāzī on the basis of the same fixed ratio: For in that case, the jamaʿ attained could not possibly have been

Table

Pargana	Arazi bigha biswa	Jama dams	J/A	Geographical Location
Bet Jalandhar				
1. Bhalwan	32,761	13,05,000	39.83	not traced; but *zamindar* hill Rajput(Dudhwal
2. Jaswan Balkoli	15,054	6,00,000	39.86	Himalayas
3. Dada	30,218	12,00,000	39.71	Himalayas
4. Dardhi	15,056	6,00,000	39.86	not traced; but *zamindar* hill Rajput(Bansi)
5. Doon Nakur	11,430	4,55,870	39.88	not known
6. Sukat Mandi	42,150	16,80,000	39.86	Himalayas
7. Seba	20,114- 8	8,00,000	39.77	Himalayas
8. Kotla	42,152	16,80,000	39.86	not traced; but *zamindar* hill Rajput (jasrotia)
9. Kotkher	32,932-16	13,10,847	39.80	Himalayas
10. Khewan Khera	6,021- 6	2,40,000	39.86	not traced; but *zamindar* hill Rajput (Jaswal)
11. Kankot	6,021- 6	2,40,000	39.86	,, ,, ,,
12. Khera	6,021- 6	2,40,000	39.86	not traced; but *zamindar* hill Rajput ('Suraj Bansi')
13. Nakrok	32,642	13,00,061	39.83	not traced; but *zamindar* hill Rajput (Jaswal)
14. Nandun	1,33,439	53,00,000	39.72	Himalayas
15. Kharak Dhar	12,043	4,80,000	39.86	not traced, & no *zamindar*-caste entered

Rachnao Doab				
1. Bhalot	20,612	8,18,182	39.69	not traced; but *zamindār* hill Rajput ('Malanhas, mod. Manhas)
2. Bhilaura	6,021	2,40,000	39.86	Himalayas
3. Bhotiyal	2,407-18	96,000	39.86	Himalayas
4. Jari Jana	6,021- 6	2,40,000	39.86	not traced; but *zamindār* hill Rajput ('Gawalyari', mod. Goleri)
5. Hiantal	6,021- 6	2,40,000	39.86	Himalayas
Chhanhat Doab				
1. Akhandur	9,866- 5	3,92,000	39.73	Himalayas
2. Bhadu	4,817	1,92,000	39.86	not traced; but *zamindār* hill Rajputs ('Bhadwal')
3. Magli	10,839	4,32,000	39.86	Himalayas
Sindh Sagar Doab				
1. Awan	10,096	4,15,970	41.20	Salt Range
2. Bel Ghazi Khan	17,426	7,20,000	41.32	Location as given in Irfan Habib's Sheet 4A dubious; *zamindār*-caste Januha (Janua), whose *mahals* are situated entirely in the Salt Range.
3. Thirchak Dhamir	6,082	2,50,575	41.20	not traced; but *zamindār* Ghakkar, and so prob. in the Salt Range.
4. Dharab	2,330	96,000	41.20	Salt Range

5. Dodot	2,330	96,000	41.20	not traced; but zamīndār Januha of the Salt Range
6. Kahwan	4,660	1,92,000	41.20	,, ,,
7. Kanbat	2,330	96,000	41.20	not traced; no zamīndār caste entered
8. Langa Hatiyar	2,330	96,000	41.20	,, ,,
9. Makhiala	9,320	3,84,000	41.20	Salt Range
10. Maral	5,825	2,40,000	41.20	Salt Range
11. Malot	3,233	1,33,233	41.21	Salt Range
12. Hathiyar Lang	7,281	3,00,000	41.20	not traced; but zamīndār Ghakkar (Salt Range)
13. Hazara Gojran	6,575	2,70,896	41.20	Salt Range
14. Himmat Khan Karamu	1,165	48,000	41.20	not traced; but zamīndār Ghakkar (Salt Range)
15. Patala	15,146	6,24,000	41.20	not traced; but zamīndār Januha (Salt Range)

in round numbers. The jamaʿ for these parganas seems for the same reason, to have been a more or less arbitrary estimate. Practically all these parganas were situated in the Himalayas or the Salt Range controlled by Hill-Rajput zamīndār and Ghakkars and Jamuha (Janjua) chiefs.[1] The absence of the suyūrghāl figures strengthens the assumption that the areas were outside the limits of full-fledged Mughal administration. The nominal nature of Mughal control is also reflected in other limitations of the Āʾīn's information: The names of castes of the zamīndārs and the numbers of their retainers (sawār and piyādas) are not provided in as many as eight of these parganas.

It would seem, then, that for some reason, which it is not easy to establish, either Abūl Fazl or the officials, who supplied information to him wanted to furnish ārāzī figures for these mahals, although no survey had taken place here. The rate of 40 dāms to the bīgha was applied to the jamaʿ figures in order to obtain a theoretical ārāzī, which was increased further by a minute fraction, so that the ratio fell below 40 dāms to about 39.8. In the Sindhsagar Doāb, a rate of 41 dāms, 5 jitals to the bīgha was uniformly used for the same purpose.

1. This cannot be said, of course, of those two parganas (both in Bet Jalandhar) whose geographical location has not been traced, and for which the Āīn enters no zamindārs.

The fact that the rate approximated to 40 dāms leads one to offer one possible suggestion for the two variant ratios. Very possibly what the officials had in mind was the rate of one rupee per bīgha. Since the jamaʿ was stated in dāms, the rupee needed to be converted into dāms. Since the rupee-dām rate fluctuated around 40 dāms, as stated by Abul Fazl himself,[1] different rates might have prevailed if the calculations for the Sindhsagar Doāb and the other doābs were made at different times. Suppose that when the officials were recording the returns of the Sindhsagar Doāb the prevailing value of the rupee was 41 dāms, 5 jītals; it would be natural for them to use this rate to obtain the ārāzī. In case the returns of the other doābs were prepared at some other time, when the rate was 40 dāms or just three or four jītals short of it, this rate would now have been applied to the jamaʿ of the parganas lying within these doābs. This seems to be a plausible explanation for the two variant rates; but, unluckily, there is nothing more tangible than speculation to base it on.

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1. Āīn, I, p.27.

Chapter III

AGRICULTURAL PRODUCTIVITY : Crops and Yields

I

On agricultural productivity we have some amount of direct information in the Āīn-i Akbarī, in the form of a schedule of crop-yields and revenue-rates. These, so far as one can judge from Abul Fazl's words, represent the 'rais' prepared by Sher Shah's administration.[1] The yields are given for land under continuous or practically continuous cultivation (polaj and parauti). For each crop three estimates of yields per bigha are furnished: high (gazīda, 'ala), middling (miyāna) and low (zubūn). An average is then struck by simply dividing by three the total of the three yields. The land-revenue purporting to be a third of the produce, is worked out by dividing this average again by three. Thus at the end we get the amount of the produce of each crop per bigha that was claimed by the State by way of land-revenue.

Abul Fazl does not mention the basis on which the three categories of land (good, middling and bad) were distinguished. The classification could have been made either

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1. Āīn, I, p.298, see also, W.H. Moreland, 'Sher Shah's Revenue System', JRAS, London, 1926, pp.447-59.

according to the fertility of the soil or the availability of irrigation, or both. It would perhaps be a fair assumption that the 'low' yield was that of unirrigated land, while the 'high' and 'middling' were those of the irrigated. In modern official returns too, beginning at least with 1892, estimates are provided separately for unirrigated and irrigated lands. It is, therefore, possible, to compare the yield of the 'low' category of lands in Sher Shah's Schedule with the modern estimates of yields of unirrigated lands. Similarly the high and middling yields of Sher Shah's schedule may be compared with modern estimated yields for irrigated lands. We shall attempt such comparisons presently.

A question more difficult to answer is, how far the simple average of the three yields taken by Sher Shah's (and Akbar's) officials can be held to represent the average overall yield of each crop. For it to be so, one would have to assume that the area with each kind of yield under each crop was exactly 1/3rd of the total land under that crop. Such an assumption would naturally be quite naive. Some crops require more irrigation than others and are raised to a larger extent in irrigated lands. Other crops still are almost exclusively grown on unirrigated lands, so that even estimates of yields on irrigated lands are not furnished for such crops in Modern Statistics.[1] It follows that the average yield calculated by

1. In the official Agricultural Statistics, the yields of many crops are given only for irrigated land, such as for sugar-cane, while for bajra and juar the yields are recorded for dry land only.

Sher Shah's officials must have exceeded the real average yield quite considerably in case of inferior crops raised on indifferently watered lands, while it was possibly lower than the real average in that of high-grade crops, normally requiring much artificial irrigation.

The area to which Sher Shah's schedules applied is not defined. But one can reasonably suppose, that they applied mostly to Delhi, the Doab region and Haryana. It is also not made clear whether the units of area and weights used here are those in force at the time the raiś were framed by Sher Shah or those prevalent c. 1595, when Abul Fazl incorporated the data into the Āin. But since many figures are in complete mans, it is probable that the figures are not converted, i.e. they are in terms of the original units, used in Sher Shah's time. At the beginning of Akbar's reign (and so presumably under Sher Shah), the man was based on a ser equal to 28 dāms weight and not 30 (as was the ser of the man-i Akbarī).[1] Similarly the bigha under Sher Shah was based on the gaz-i Sikandari which was 39/41 of gaz-i Ilahī.[2] Now since both the weight and area were smaller by about the same proportion, the figures would vary only insignificantly (by 1.9% less), if

1. Irfan Habib, Agrarian System, pp.367-8.

2. Ibid., 353-6.

one were to restate the yields in terms of man-i Akbarī per bigha-i Ilāhī.[1] I have, therefore, ignored the difference as not worth the trouble of citing two sets of figures all the time.

II

Reliable modern estimates of agricultural productivity are obtainable from the second half of the 19th century. They are found for the earlier years mainly in settlement Reports and the District Gazetteers. The official Agricultural Statistics begin to give five-yearly estimates of yields from 1892 onwards. These are furnished district-wise and separately for irrigated and unirrigated lands. From 1893 the crop-cutting method was introduced to determine the yields; but the 1892 estimates were "based on the then available material, namely, the various statistical publications, such as the periodical agricultural and settlement reports, crop forecasts, replies received in response to enquiries from the Famine Commission and other ad hoc bodies, etc.[2]

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1. The average yield estimates can be converted into units through multiplying by the factor 0.981 i.e. by reducing by 1.9%. The estimate of average yield for wheat would then be 12.71 in place of 12.95 and so on.

2. Agricultural Statistics, part I, 18th issue, 1904, p.xxiii.

The 1892 estimates seem the most suitable for the purpose of comparison with the _Āin's_ figures, for this would meet the possible objection that the crop-cutting yields are too sophisticated for being set alongside the kinds of estimates made by Mughal officials.[1] Without entering into a discussion of how far this is a tenable thesis, one would expect in any case that the estimates by the Mughal and British officials (before the crop cutting method came into use), were made under similar compulsions and by similar methods, and thus are broadly comparable, the margin of exaggeration, if any, being the same in both cases. It is worth noting, however, that the comparison of the yields of 1892 and 1900 reveals hardly any change in the estimates, at least in the areas covered by us, so that it would have really mattered little if the later estimates were used.

Table I (a) below gives the yields of six major crops from irrigated lands for the districts of the Doab and Delhi alongside the averages of Sher Shah's 'high' and 'middling' yields. Table I(b) shows the yields of unirrigated land for the same districts and Sher Shah's 'low' yields. Table I(c) and (d) offer similar comparative data for a set of Haryana and Eastern Punjab districts. All modern quantities are put in _man-i Akbarī_ per _bīgha-i Ilāhī_ after conversions from modern measures.

1. A.W. Heston, 'The Standard of Living in Akbar's Time - A Comment', _IESHR_, Vol. XIV, No.3 (July-September 1977), pp.391-6.

Table I (a)

Crop Yield from Irrigated Lands

(_man-i Akbarī_ per _bīgha-i Ilāhī_)

	Wheat	Barley	Gram	Bajra	Juar	Cotton	Sugar-cane	Mustard	Sesame
Āīn $\frac{A+B}{2}$	15.00	15.25	11.75	9.0	11.75	8.75	11.75	9.5	7.0
1892									
Delhi	12.13	10.41	-	-	-	-	15.62	6.1	-
Agra	10.67	14.32	10.67	-	-	-	-	-	-
Aligarh	16.01	14.23	10.67	-	-	6.13	22.23	-	-
Bulandshahr	14.21	14.23	10.67	-	-	6.13	22.23	-	-
Etawa	13.34	14.23	-	-	-	5.52	26.68	-	-
Etah	13.34	14.23	10.67	-	-	-	22.23	-	-
Muttra	14.21	14.23	8.89	-	-	5.52	17.79	-	-
Saharanpur	13.34	14.23	10.67	-	-	6.13	17.79	-	-
Muzaffarnagar	13.34	14.22	10.67	-	-	6.13	22.23	-	-
Mean, 1892	13.15	13.82	10.47			5.93	21.00		

Table I (b)

Crop Yields from Unirrigated Lands

(man-i Akbarī per bīgha-i Ilāhī)

	Wheat	Barley	Gram	Juar	Bajra	Cotton	Sugar-cane	Mustard	Sesame
Āīn C	8.87	8.12	7.5	7.50	5.02	5.0	7.5	5.13	4.0
1892									
Delhi	5.29	5.60	3.84	3.64	3.84	3.68	-	2.0	-
Agra	5.34	7.11	5.33	6.20	-	-	-	-	4.45
Aligarh	10.67	9.78	7.11	8.89	7.11	3.68	-	5.34	3.80
Bulandshahr	9.76	9.78	7.11	7.11	6.23	3.68	-	5.34	3.80
Etawa	6.23	7.11	5.34	-	-	-	-	-	4.45
Etah	6.23	7.12	7.00	7.00	7.00	-	-	-	4.45
Muttra	9.76	9.78	4.45	6.23	5.34	-	-	-	4.45
Saharanpur	8.89	9.78	7.11	-	4.89	3.68	-	4.66	3.47
Muzaffarnagar	8.89	10.85	7.11	6.67	4.89	3.68	-	5.34	3.80
Mean	7.51	8.53	6.03	7.07	5.79	3.68	-	4.54	4.08

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Table I (c)

Crop Yields from Irrigated Lands (Panjab)

(<u>man-i Akbarī</u> per <u>bīgha-i Ilāhī</u>)

	Wheat	Barley	Gram	Bajra	Juar	Cotton	Sugar-cane	Mustard	Sesame
Āīn $\frac{A+B}{2}$	15.00	15.25	11.75	9.00	11.75	-	-	-	-
1892									
Hissar	6.31	5.20	-	2.60	3.47	-	-	3.62	-
Rohtak	10.91	10.84	12.15	4.53	8.68	-	27.77	-	-
Gurgaon	10.15	13.02	-	-	-	-	-	-	-
Karnal	9.09	9.26	3.90	4.97	3.90	-	16.49	5.64	-
Ambala	10.15	8.70	6.59	5.31	5.31	-	-	4.06	-
Ludhiana	11.76	10.98	-	-	-	-	-	8.42	-
Mean of Modern Figures	8.12	9.59	7.55	4.35	5.34	-	22.13	5.44	-

Table I (d)

Crop Yields from Unirrigated Lands (Panjab)

(man-i Akbarī per bīgha-i Ilāhī)

	Wheat	Barley	Gram	Bajra	Juar	Cotton	Sugar-cane	Mustard	Sesame
Āīn C	8.87	8.12	7.5	5.02	7.5	5.0	7.5	5.13	4.0
1892									
Hissar	4.75	5.18	5.27	2.56	2.75	-	-	1.26	-
Rohtak	6.25	10.84	7.98	3.47	5.29	-	-	-	-
Gurgaon	6.44	7.03	6.66	4.77	6.77	-	-	-	-
Karnal	5.40	4.90	7.81	2.99	2.52	-	7.81	5.12	-
Ambala	5.29	5.60	2.52	3.84	3.64	-	-	3.19	-
Ludhiana	6.05	3.95	5.03	-	4.49	-	-	3.68	-
Mean of Modern figures	5.70	6.25	5.87	3.53	4.24	-	7.81	3.31	-

The tables suggest that the mean of the Āin's high and middling yields is only slightly higher than the 1892 estimates for the Doab districts for irrigated lands, in the case of wheat, barley and gram but much lower in that of sugarcane. In unirrigated lands the proximity of the Āin's low yields with modern estimated yields of wheat, barley, jowar, bajra and gram is quite striking. In the modern returns, estimates for jowar and bajra are not given for irrigated lands; and similarly it is assumed that sugarcane is not raised on unirrigated land. It is worth noticing, moreover, that the modern yields for the Haryana districts are much lower than the yields in Sher Shah's schedule, in respect of both irrigated and unirrigated lands (see Tables I(c) & (d)). It is possible, therefore, that Sher Shah's schedule of yields was fixed more with an eye to the Doab, than to Haryana or the Panjab.

The comparison of yields from irrigated and dry lands thus shows that, if the ratio of irrigated to dry land has remained the same, the average yield per acre about 1545 was probably the same or a little above what it was in 1892. But if the proportion of irrigated land to dry land has in fact substantially risen, the modern average yield could be much higher than the average yield of Sher Shah's time.

No information is forthcoming about the extent of irrigation in the 16th century, but what we know of the changes

in irrigation in the second half of the 19th century, could provide us with the means of judging how far, if at all, the ratio of irrigated to dry land has altered. The new factor during this period was almost entirely that of canals.

The following table (II) shows that the extent of total irrigated land, as well as the canal-irrigated land, as per cent of the total cultivated area, during the early 1870s and the first decade of the 20th century, in some districts of western U.P.[1]

Table II

Districts	Total Irrigated Land as % of Cultivated Area		Canal Irrigated as % of Cultivated Area	
	1870's	1910's	1870's	1910's
Mainpuri	80.17	45.70	2.88	20.06
Etah	30.94	54.95	3.91	24.16
Etawa	48.29	41.67	19.13	29.80
Bulandshahr	36.98	48.35	15.61	24.06
Aligarh	72.32	47.84	10.16	16.45
Meerut	55.32	50.44	17.10	31.25

1. The figures for 1870's are from Atkinson, II, pp.382-3; III, pp.23-4; IV, pp.21, 256, 510; and for 1910's from Nevill, IV, Appendix VI; V, Appendix V; VI, Appendix V.

In the 1870's, then, irrigation covered between 31 to 80% of the total cultivated land in the six districts, while canal irrigation was nowhere over 20% of the total cultivated area. The area irrigated by canals increased markedly in the subsequent period, but the relative extent of irrigated area declined in four out of the six districts. Indeed, by and large, in western U.P. canal irrigation tended to replace well-irrigation, rather than alter, in the net, the ratio of irrigated to dry land under cultivation. The fact is borne out, not only by the statistical evidence as it stands,[1] but was also widely noted in official reports of the time.[2] The major reason for this phenomenon was that much of the irrigation before the canals came, was by kachcha wells; and canals by interfering with the natural drainage, disturbed the water-table and adversely affected well irrigation in many tracts.[3]

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1. The decline was not always only in relative proportion, but at times in absolute extent as well. For example, in the Bulandshahr district in 1865 the total irrigated area was 320,426 acres out of which 36,754 acres were irrigated by canals (i.e. 11.47%); in 1870 the area under irrigation had declined to 288,249 acres in absolute terms, while the area irrigated by canals increased to 121,968 acres i.e. to 42.31% of the total irrigated area (Atkinson, Vol. III, pp.221-222).

2. See W.H. Moreland, Notes on the Agricultural Conditions of the United Provinces and of its Districts, Allahabad, 1913.

3. In 1870 in District Aligarh 467,148 acres were irrigated by kachcha wells (Atkinson, Vol. II, p.381; Settlement Report, p.83). In 1315 Fasli (1906-7), the area irrigated by wells (masonry and kachcha) had fallen to 282,425 acres. (Nevill, Vol. VI, Appendix V). Similar information is provided for other districts such as Meerut (Atkinson, Vol. III, p.246) and Bulandshahr (Ibid., pp.21-22) etc.

It can, therefore, be assumed that canal-irrigation has not altered the relative extent of irrigation substantially in most of this region. It follows, that there was probably no major increase in the relative extent of irrigation between the end of the 16th and close of the 19th century in Western U.P. and the Delhi tract.

Given this as a fairly firm conclusion, it now seems possible to compare the average 16th century yields with those of the 19th century. As has already been noted, the average yields set out in the Āīn are based on the assumption that two-thirds of the land under every crop was irrigated (= 'high' and 'middling') land. The assumption of a flat ratio of this kind for all crops is of course untenable. Irrigation must have covered varying proportions of area under different crops. Unfortunately, information about the ratios of irrigated and dry land under each crop is difficult to come by, even for the 19th century. Nevertheless, it seems probable that a large part of wheat and, to a lesser extent, of barley was grown on irrigated land. Irrigation would not have covered more than half of the area under gram, while bajra and juar were mostly grown on dry land.[1]

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1. In 1871 in the district of Shahjahanpur, where only 20.2% of the total cultivated area was irrigated, (The reason for this low extent of irrigation was most probably high rainfall, which averages 39" per annum in this district.), the proportion of irrigated land for various crops was as follows: wheat, 38%; barley, 27%; gram, 3%; juar and bajra, less than 1%; indigo, 46%; sugarcane, 60%; and cotton, 3.9% (Atkinson, Vol. IX, p.44). While this was the situation in

(contd)....

As for cash crops, it seems a reasonable assumption that cultivation of indigo and sugarcane was confined to irrigated land only. Cotton, which is a kharif crop, needed artificial irrigation to a far less extent. Modern returns, furnish estimates for yields of cotton on both dry and irrigated lands; and one may perhaps legitimately assume that in the Delhi-Doab area, at least one-fifth of the land, under cotton was irrigated.

The other cash crops, mustard and sesame, usually mainly depended upon rainfall.[1] The Agricultural Statistics give estimates, of thier yields on dry lands only.

With these facts in mind about the degree of dependence upon irrigation of the major crops, we can attempt an estimation of the average yield for the whole of the cultivated land from the crop schedule ascribed to Sher Shah, by simply giving different weights to the different categories of yields. For wheat, for example, we may assign 75% to the mean of the high and middling yields (representing yield on irrigated land),

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(continued)..... a district where irrigation covered only a fifth of the total cultivation, in districts like Mainpuri and Aligarh, where irrigation respectively exceeded 72 and 80%; the per-centage of irrigated land under wheat out of the total under the crop could hardly have been less than 75%; and under other crops too it should have been correspondingly higher.

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1. Atkinson, Vol. IV, part I, p.253.

and 25% to the yield on dry land. In the case of barley, we may give equal weights to all the three yields; that is, we may assume that about 67% of the land under that crop was irrigated. For gram equal weights may be given to the yield on irrigated and dry land. The estimates of yields on the dry land alone should be accepted as normal yields for juar and bajra, mustard and sesamum. On the other hand, the average of the two yields on irrigated land should be taken as the standard for sugar-cane. For cotton we should give to the mean of high and middling yields a weight equal to 20%, and to the low yield, a weight equal to 80%.

The average yields, for the 16th century, computed in this manner can now be compared with the normal yields of the 19th century.

For the 19th century, official sources furnish estimates of normal or average yields for various crops for the Delhi and Doab districts, for two sets of years, viz. 1841-42 and around 1870. For the productivity per acre of different crops in the districts of Agra, Bulandshahr and Meerut, we have Mansel's estimates for 1841; and for Muzaffarnagar, Thornton's estimate for 1842. These have been reproduced in Simith's <u>Final Settlement Report</u> of Aligarh.

For the years around 1870, Atkinson's volumes give the estimates of yields for certain districts. In some cases they

are given straightaway for a particular district. These can of course be used directly. But in other cases separate estimates are offered for subdivisions, while in others the yield of each crop is estimated separately for different soils. In these cases wherever possible, a simple mean has been taken. But it is obvious that these estimates leave much to be desired. For one thing, they are sometimes so close to, or are even higher than, the 1892 estimates for irrigated lands, that one begins to suspect that for the higher grade crops, like wheat, the official estimators often had in their minds, crops raised on irrigated lands only.

The average yields in 1841-42 are not very different from those of c. 1870, though the districts covered by the two sets of estimates are different, except for Agra (in whose case the two estimates are very close). Such differences in yields as are noticeable, may therefore be due not to the difference in time but to the difference in territorial coverage. However, both the sets of districts belong to the Delhi-Doab region, to which Sher Shah's rai's may reasonably be held to apply. As such, both sets of estimated yields can be compared with the average yields deduced from Sher Shah's rai' or crop-schedule. The estimates are set out in Table III.

Table III

Average Crop Yields
(man-i Akbarī per bīgha-i Ilāhī)

	Wheat	Barley	Gram	Bajra	Juar	Cotton	Sugar-cane	Mustard	Sesame
Āīn	13.49	12.93	9.71	5.02	7.57	5.75	11.75	5.13	4.00
1841-4									
Agra	13.33	13.07	5.17	5.42	7.87	-	-	-	-
Bulandshahr	16.26	15.89	12.58	-	-	-	-	-	-
Muzaffarnagar	8.61	9.74	6.77	3.85	4.57	-	-	-	-
Meerut	15.88	15.29	15.55	-	5.66	-	-	-	-
Mean	13.52	13.50	10.02	4.64	6.03	-	-	-	-
1870s									
Agra	13.13	12.34	7.69	4.23	7.12	6.15	13.39	-	-
Delhi	12.60	10.90	9.00	7.20	7.50	-	-	-	-
Aligarh	15.18	13.88	7.38	7.59	9.11	5.70	17.14	3.72	0.89
Etawa	14.06	-	-	10.85	10.85	4.34[1]	26.82	-	-
Saharanpur	15.32	20.23	16.96	7.66	4.02	6.26	18.89	10.71	4.02
Mean	14.06	14.34	10.26	7.51	7.72	5.76	10.06	7.22	2.46

1. The estimate for irrigated land is 6.65 and for dry is 2.91.

Forconvenience the results of the comparison of over all average yields in the 1540's, 1841-42 and c.1870 are now summed up crop-wise, along with those of the comparison already made between yields from irrigated and dry lands, in the 1540's and 1892.

Wheat: the average productivity was almost the same in 1540's and 1841-42, but the estimated yield for 1545 is a little higher than the general estimated yield around 1870. The fall in the yield since 1545 emerges more definitely from the comparison made separately of yields from irrigated and unirrigated lands. It seems to be substantial in the case of irrigated lands, though less pronounced in that of yield on unirrigated land.[1]

Barley: the average modern yield in 1841-42 as well as c.1870 is a little higher than that worked out for the 1540's; but the yield from irrigated land was higher in the 16th century. For unirrigated land the yields of the two periods are strikingly close.

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1. The closeness of the estimates become all the more striking, when we get the details of productivity accordingly to soils. For the district of Etawa (Atkinson, Vol. IV, p.251), we have three estimates of 'output', 18.77, 15.64 and 12.40 man/bigha-i Ilahi, on soils of different qualities. Sher Shah's three estimates are 18, 15 and 8.87 man/bigha. While the first two match very well, the third in Sher Shah's rai is exceptionally low. This reinforces our view that Sher Shah's 'low' yield is not given for inferior soil but for unirrigated land.

Gram: The average 1545 yield is slightly lower; but the separate estimates for irrigated and unirrigated lands, suggest a higher yield in 1545 than in 1892.

Bajra: It has been assumed that bajra was cultivated on unirrigated land alone. Sher Shah's estimate for yield from the lowest category of land is a little higher than the average estimate for 1841-42, but is much lower than the average worked out for c. 1870. The estimates separately made for irrigated and unirrigated land, in 1892, are also higher than the comparable yields derived from Sher Shah's schedule in the Āin.

Juar: The assumption for juar too, is that the cultivation was confined to unirrigated land. Here we find a close proximity in the estimates for c. 1545 and those of c. 1870 and 1892. But the normal yield as estimated in 1841-42 comes out to be less than that of 1545.

On the whole, therefore, one can say that there appears to have occurred no major change in the productivity per acre of food crops between the 16th and the 19th centuries.

Taking the cash crops, one detects a marked increase in the productivity per acre of sugarcane between Sher Shah's time and the 19th century.[1] The estimated yield on the

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1. The yield in Āin is stated in terms of qand-i siyah (lit. black sugar) and in the 19th century statistics in terms of gur (raw sugar).

irrigated land (average of high and middling) for c. 1545 is much lower than the average yield estimated for the 1870's. (It is lower than the estimated yields in each one of the four districts for which estimates have been obtained for the 1870's. In fact even the Āin's 'high' yield (viz., 13 man/bīgha) is markedly lower than the average yield estimated in the 1870's. The comparison with the estimates for 1892 indicates a yet greater increase in the later period. The rise in the yields of sugarcane may possibly be attributed to the introduction of metal cane-crushers, resulting in extraction of larger amounts of juice.[1] One can also suggest as contributary factors the introduction of new varieties of cane, and the large supply of water through canal irrigation.

While the estimated over-all average of cotton yields for 1545 and 1870's are about the same, the productivity separately estimated for irrigated and unirrigated lands in 1892 suggests a decline within each category between 1545 and 1892.

A well-known North-Indian cash crop was indigo. Sher Shah's schedules do not state the standard yields for indigo,

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1. See Watt, VI, part II, p.257. The iron 'Beheea mill' was introduced in 1873-4 and was soon adopted in U.P. Writing in 1893 Voelcker remarks, "It is in the North-West Provinces (U.P.) that most advance has been made, and iron mills are almost general". (Voelcker, pp.276-7).

although it was a very widely cultivated crop at that time. But early in the 17th century (1620's), the careful Dutch factor Pelsaert makes two statements, which, when combined, may give us an estimate of yield in the celebrated Bayana tract close to Agra. He says, first, that the "yield" (i.e. leaf and stalk) of one bīgha was put in one put or vat at a time; and that the contents of each put varied from 12 to 20 ser of the dye, subject to a further loss of weight of about 1/8th, through further drying in the course of subsequent handling.[1] Given the size of the local bīgha as defined by Pelsaert,[2] the average yield of the dye should have amounted to 16.59 to 27.66 lb. per bīgha-i daftri, at the vats and 14.52 to 24.20 lb. after transportation.

Unluckily, this estimate cannot be compared with many modern estimates where the yield is stated in terms of the green plant. Even where we get the estimates in terms of the dye, as in the Agricultural Statistics for 1892; these are not directly comparable due to the change in the processes of manufacture from the Indian method of natural evaporation

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1. F. Pelsaert, Remonstrantie, tr. Moreland and P. Geyl, Jahangir's India, pp.10-11.

2. This was identical with, or close to, the later bīgha-i daftar; see Irfan Habib, Agrarian System, p.364. The man and ser used in the indigo were of Akbari weight.

(so well described by Pelsaert himself) to the boiling method imported through the European indigo planters and also widely adopted by "native factories" during the latter half of the 19th century. The boiling method produced indigo of a much higher concentration but far smaller weight in relation to the green plant from which it was extracted.[1]

According to a report quoted by Watt, the evaporation method by which "impure indigo" known as gad was prepared in U.P. ('north-west Provinces') and many other parts "for local use", yielded 2½ maunds of gad or dye out of 100 maunds of plant. Unluckily, modern estimates of plant yield per acre are very rare. According to Smith's Final Settlement Report for Aligarh (1872-3; published 1882), each acre yielded 42 maunds of green plant.[2] Atkinson estimates yield ranging from 78.75 to 105 maunds per acre in the Etawa district.[3] These estimates suggest a range of 34.44 lb to 86.10 lb of gad per bigha-i daftarī; this is far in excess of the yield as estimated by Pelsaert. But if one accepts Hadi's ratio between the yield of evaporation ('kachcha' indigo) and boiling methods ('pakka' indigo) as inferred from his relative prices for both categories (viz., 1 . 8 : 1), we obtain

1. Cf. S. Muhammad Hadi, A Monograph on Dyes and Dyeing in the North West Provinces and Oudh, Allahabad, 1896, p.76; Watt, IV, pp.408-9 (where the yield of the evaporation is given under the designation of gad.)

2. Smith, Final Settlement Report, p.37.

3. Atkinson, Vol. IV, p.251.

the following figures of yield:

District	Year	Yield	Yield in 1892[3]
Agra	1871	14.81[1]	12.96
Etawa	1864	14.31-19.43[2]	13.68
Aligarh	1872-3	7.62	13.68

From this table, it would appear that the yields of the dye from the evaporation method in 1892 were lower than the floor of the estimate for 1620's, though the difference is not very large. The 1871 estimate for Agra is almost the same as the lower limit of estimate for Bayana in the 1620's. The estimated range for Etawa too in 1864 is quite close to the range for 1620's. But in the case of Aligarh, the estimate for 1872-3 is about the half of the lower yield in the 1620's. This low yield has been ascribed to the introduction of a different strain of indigo producing a more concentrated dye;[4]

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1. Atkinson, Vol. VII, p.455. In the case of Agra there is an obvious misprint: The amount of dye per acre is given as 2¼ mds, and the total value of out turn as Rs.24.36, which gives the value of dye as Rs.10.83 maund - an impossibility. The figure '2' seems superfluous and the correct figures should probably be ¼ mds.

2. In the case of Aligarh (Settlement Report, p.37) and Etawa (Atkinson, Vol. IV, p.251), where the yields are stated in terms of the green plant, the ratio between plant and dye has been taken as 325:1, following Smith, Final Settlement Report, p.37. This ratio falls within the range of estimates 300:1 to 333:1 given in Watt (Vol. IV, pp.408-9).

3. All these figures are based on the estimates in the Agricultural Statistics for the dye from irrigated land.

4. K.K. Trivedi, 'Movement of Relative Value of Output of Agricultural Crops in the Agra Region, 1600-1900', read at IHC, 1975. Trivedi is, however, of the opinion that in the second half of the 19th century the yields in general were as low as those of Aligarh, a conclusion which is certainly not borne out by the evidence for other districts in earlier years as well as in 1892.

but it is probable that as Smith himself suspects, the Aligarh yield is an underestimate.

It seems, then, that Pelsaert's estimate of yield for the Bayana indigo in the form of manufacture dye is less than that of the gad (the impure indigo for local consumption, which is perhaps, the same as the 'coarse indigo' of European accounts of the 17th century), but slightly above the level of the estimated yield of the better quality of the dye obtained through the same 'native' process of evaporation. This may have been because the Bayana plant was of an especially high quality, and perhaps yielded weight for weight larger amount of dye through evaporation than indigo crops cultivated in the adjoining Doab tracts.

On the whole, then, one would be inclined to comclude that indigo plant production per acre was probably about the same in 1600 as in the latter half of the 19th century.

Oil Seeds: The estimates of average yields from the 1870's usually omit oilseeds altogether; but as noticed above, these crops were confined to dry lands and the estimated yields on dry lands for 1892 are available. These are fairly close to the yield from the lowest of the three yields in the Āīn. Any substantial change in the productivity per acre of these crops, is, therefore, unlikely.

III

From such evidence as we have, it may then be held that between 1540-45 and c.1870, the yields per acre remained practically the same in the case of the major food crops; if any change has occurred, it has been barely marginal. On the whole, too, no great change too is discernible in these cash crops for which we have evidence.

But all this does not *ipso facto* mean that the over-all agricultural productivity per acre has remained the same: One might still argue that given stable productivity for each crop, productivity in agriculture may have risen owing to an extension in the per centage of area sown with crops with an out turn of higher value. For example, a relative increase in area under 'high-grade' crops like sugarcane, cotton and wheat might lead to a general rise in the value of agricultural production per acre, though productivity per acre of these and other crops might remain unaltered.

In order to consider this possibility, we should, ideally, have statistics for the area under various crops in the 16th century as well as in 1900. But since we do not have the former, we must think of other devices to substitute for this kind of direct evidence.

One possible pointer to whether the pattern of distribution of crops has changed since the 16th century may be

found in the value of the output of various crops in relation to wheat, in the Āīn, and in the late 19th century. If the relative value of output of the various crops has remained broadly the same, one can legitimately infer that the share of these crops in total production has also remained by and large constant. The possibility that though the share in total production of a crop has substantially altered and yet its relative value remains unaffected is one which can be reasonably regarded as extremely remote.

The value of output, for the 16th century, can be computed, in the case of Agra by multiplying the 'standard' average yields, estimated above, for c.1545, by the prices given in the Āīn, and for other districts by the Āīn's prices modified according to the price difference between these districts and Agra (deduced from the price data in the official Prices and Wages for the decade 1860-70).[1] We do not have prices of cotton and sugarcane, for the 16th century, and therefore, the relative value of out turn in the case of these two crops cannot be calculated. However for these crops, one can consider the demand in cash per unit of area (dastūr-ul ʿamal) in relation to the demand on wheat as broadly representing the relative value of their output. For c.1870 we have accepted this estimated value of output as given in the District Gazetteers and Settlement Reports.[2]

1. I have used Prices & Wages, 1892. The prices in the decade 1861-70 are preferred because the effects of railways on prices were yet to be fully felt.

2. Atkinson, Vol. III, pp.227, 470; Vol. IV, p.251; Vol. VII, pp.43, 444-5.

Table IV

Relative Value of Out turn per Acre of Various Crops
(Wheat = 100)

	Agra		Kol(Aligarh)		Meerut		Etawa		Farrukhabad (Kanauj)		Muzaffarnagar	
	1545-95	1870-71	1545-95	1872-73	1545-95	1870	1545-95	1874-5	1545-95	1870	1545-95	1871-
Wheat	100	100	100	100	100	100	100	100	100	100	100	100
Barley	63.90	70.24	71.40	65.32	71.84	100	75.65	43.63	69.60	75.0	64.37	48.4
Gram	47.99	40.65	55.34	48.57	62.34	88.89	58.09	32.14	52.20	N.A.	50.48	39.9
Juar	46.76	41.14	47.32	42.86	62.01	66.67	52.11	48.50	54.14	52.50	43.78	38.0
Bajra	24.81	28.61	24.92	41.61	33.38	38.89	25.87	N.A.	25.45	N.A.	35.08	N.A.
Cotton	129.99	66.67	148.40	78.57	153.61	72.22	144.54	63.06	154.91	100	153.61	96.9
Sugarcane	219.80	197.56	222.65	217.86	211.71	-	222.65	227.02	269.56	160	211.70	116.4
Indigo	249.70	78.35	268.99	45.00	277.11	-	264.92	62.41	217.39	40	277.11	-
Sesame	-	-	45.93	28.57	-	-	-	-	-	-	-	-
Mustard	-	-	69.60	11.00	-	-	-	-	-	-	-	-

	Delhi	
	1545-95	1870
Wheat	100	100
Barley	64.77	66.61
Gram	54.09	76.58
Juar	42.03	56.93
Bajra	25.51	49.98
Cotton	-	-
Sugarcane	-	-
Indigo	-	-
Sesame	-	-
stard	-	-

It appears from Table IV that relative to wheat the value of output of food grains, in general, remained more or less the same in the 16th and the latter half of the 19th century. Though there are individual cases of major variations, no major shift is deducible on the whole. But the position is quite different in the case of cash-crops; here we find a definite decline in the relative value of output, which is strikingly large in cotton and indigo and markedly noticeable in sugarcane.

For major oilseeds modern information is, rather surprisingly, scarce. We have information for one district only (Aligarh). It will be unsafe to say anything on the strength of this solitary piece of evidence, since the yield reported for the district is exceptionally low, viz. 0.89 man/bīgha for mustard, while for 1892 the corresponding estimate given in the Agricultural Statistics is 5.34 man/bīgha and Watt's estimate for U.P. is 3.72 to 5.4 man/bīgha.[1] Nothing definite can, therefore, be said about the value of output of oilseeds.

From this we may draw two inferences: First, the area under various food crops relative to that under wheat did not probably alter very much between 1600 and 1870; secondly, the relative area under sugarcane, cotton and indigo probably declined.

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1. G. Watt, The Commercial Products of India, p.177.

Since the largest amount of change during the three centuries is most likely to have occurred during the second half of the 19th century, marked by canal construction and railways, it would be interesting to see if the two broad inferences, we have made, are borne out by the actual changes in crop-distribution during this period.

Table V gives the distribution of area under some selected crops in districts of Western Uttar Pradesh in or about 1870, 1884-5, 1897-8 and 1910-11, the area under each crop being shown as % of area under gross cultivation.

Table V (next page)

The data brought together show that, there is no marked increase in the per-centage of area under wheat during this period. A sharp fall appears in the relative extent of area sown with juar, but there is a corresponding increase in the area under gram. Since the values of outturn of these two crops are of the same magnitude, these shifts should have left the general productivity unaffected. The cultivation of barley too shows a general tendency towards increase, while the relative extent under bajra and maize remained more or less the same.

It appears, then, that no substantial change occurred

Table V

Distribution of Area under Various Crops, 1870-71 to 1910-11
(% of Gross Cultivation)

	Agra				Aligarh				Etawa			
	1870-71	1884-5	1897-8	1910-11	1872-3	1884-5	1897-8	1910-11	1870	1884-5	1897-8	1910
Wheat	15.26	8.41	10.25	10.80	20.58	16.29	22.96	17.97	10.00	13.36	14.50	12.
Barley	3.40	-	13.32	16.31	10.57	-	14.94	18.32	2.44	-	11.71	15.
Gram	7.70	-	16.50	30.33	6.36	-	11.74	18.31	3.94	-	14.42	18.
Juar	21.06	-	11.06	6.06	17.99	-	10.57	6.49	18.63	-	9.18	5.
Bajra	17.44	-	22.07	15.21	7.96	-	8.37	8.79	14.31	-	9.52	18.
Maize	0.82	-	1.58	0.13	0.41	-	8.57	3.93	2.68	-	8.24	2.
Sugarcane	0.71	0.53	0.19	0.37	0.18	18.32	0.36	1.11	4.11	0.94	1.16	2.
Cotton	14.08	16.82	7.15	0.39	13.54	12.84	5.99	8.83	14.06	1.27	6.30	6.
Indigo	0.40	1.00	0.56	-	3.28	5.99	3.95	0.26	1.34	6.85	6.60	0.
Oil seeds	-	0.42	0.42	2.11	0.04	12.84	0.07	2.43	-	0.06	0.02	0.
Tobacco	-	0.10	0.20	0.4	-	0.4	0.4	0.5	-	0.3	0.5	0.
Fodder crops	-	0.39	2.30	3.1	-	1.2	3.7	5.1	-	1.0	1.4	1.

	Muzaffarnagar				Farrukhabad			
	1860-1	1884-5	1897-8	1910-11	1870	1884-5	1897-8	1910-11
Wheat	31.6	31.14	29.26	36.90	31.10	14.91	16.89	22.65
Barley	3.1	-	4.09	4.91	20.35	-	16.92	15.68
Gram	4.3	-	12.44	17.33	3.46	-	8.67	11.37
Juar	4.4	-	3.81	0.35	15.16	-	10.75	7.93
Bajra	5.2	-	2.57	6.22	13.01	-	5.12	12.68
Maize	2.7	-	5.63	4.19	0.2	-	12.83	5.63
Sugarcane	6.2	6.85	9.36	4.8	3.64	1.78	1.60	2.79
Cotton	4.1	3.69	2.55	3.57	5.14	5.82	3.74	0.14
Indigo	-	0.12	0.4	-	0.11	4.02	1.79	0.08
Oil seeds	-	3.69	0.09	0.50	-	0.02	0.06	0.18
Tobacco	-	0.08	0.2	0.2	-	0.7	0.6	0.6
Fodder crops	-	0.80	1.2	13.4	-	2.3	2.5	2.6

during the period 1870-1911 in the relative extent of area under the major food-crops, though there might have been just a slight increase. But the same cannot be said of the area sown with cash crops. Table V reveals a marked tendency towards contraction in area sown with cotton, with indigo too displaying a similar tendency, while the relative area under sugarcane fluctuated considerably. The extent (which in any case, is of insignificantly small magnitude) under tobacco remained almost unchanged in relative terms. Only in the case of oilseeds was there an increase in relative extent. But the percentage of area under oilseeds is so small that the change should have hardly made much difference in average productivity. There is however an interesting development, viz., the per centage of area under fodder crops showed a definite tendency towards increase. This seems probable, since with the extension of cultivation and contraction of pastoral grounds, fodder crops might be expected to have become more important. But being of low value, they should have tended to pull down rather than raise the average productivity per acre of cultivation.

The two inferences earlier made by us were that in Western U.P. the relative area under food crops remained almost unchanged during the three centuries (17th - 19th) and that there occurred some contraction in the area sown with cash crops. We have now seen that these inferences are corroborated by the more direct and detailed evidence for the railway period (1870-1911), which should logically have been the period

of greatest change during the entire span of time. This gives us confidence in restating our major conclusions in a more elaborate form.

To take, first, agricultural productivity between 1540 and 1900, in the region around Agra and Delhi: While the average output of food-grains stayed unchanged, in the major cash crops such as cotton and sugarcane the increase in the yields has been accompanied by a fall in value and perhaps in relative extent. In the case of indigo no change in productivity can be established, largely because of a change in the process of manufacture, while a contraction in the area cultivated is possible. A slight increase in the relative area under oil seeds can not have off set the general contraction in the area under the major cash-crops. The extension of fodder-crops would be a factor in pulling down the average value of output of cultivated land. In sum, if we go simply by our statistics, overall productivity would appear to have either remained broadly stationary or, as is more probable, marginally declined, between the 16th century and the early years of the present century.

Obviously these inferences are based on data available for one region only, though it was the core region of the Mughal Empire. In other areas, were the evidence available, the result might have been different at least in detail. It is possible, for example, that cotton cultivation

increased in Gujarat during the closing decades of the 19th century; and in Bengal jute cultivation expanded phenomenally during the 19th century. Such changes could have affected overall productivity in complex ways. But such effect was, on the balance, probably always marginal; and unless explicit evidence turns up to alter it, the picture, could, in its broad features, be held to apply for the country as a whole.

LAND REVENUE

Chapter IV

LAND REVENUE DEMAND

The land-revenue was at the heart of the polity as well as economy of the Mughal Empire; and much has therefore been said in modern studies on its magnitude and mode of assessment and collection. As is evident from the information provided by Abul Fazl in his Āīn-i Akbarī, Akbar's administration attempted and achieved a remarkable degree of standardization of the land-revenue system over a fairly large region. The evolution of Akbar's land-revenue policy based on this evidence has been studied by Moreland and Irfan Habib.[1] But valuable as their interpretations are, they have not exhaustively studied the statistical part of the Āīn's evidence, and a number of hypotheses untested by actual recourse to the statistics remain, together with certain loose ends or questions left open that the statistics could conceivably tie up. In this chapter an attempt is first made to fill this gap by checking every existing assumption with the Āīn's statistics and seeing whether the picture of evolution of Akbar's revenue

1. W.H. Moreland, Agrarian System of Moslem India, pp.82-92; Irfan Habib, Agrarian System, pp.190-256. See for an earlier study by R.P. Tripathi, Some Aspects of Muslim Administration, Allahabad, 1959, pp.308-38.

policy can be made more precise and, wherever necessary, corrected. But this is only a step - though a necessary step, towards an elucidation of what to the economic historian appears a far more crucial question: The magnitude of the gross agricultural product alienated in payment of revenue.

I

The region where the systematised land-revenue administration of Akbar functioned, comprised the larger portion of Northern India, its territory extending from the Salt Range to the Son and contained within eight ṣūbas. The mode of revenue assessment followed here was known as the zabt. The term zabt signified assessment of revenue by applying standard rates, fixed in cash or kind to area under each crop separately. Under the heading Āīn-i dehsāla,[1] Abul Fazl sets out in detail the cash-rates (dastur-ūl 'amal) in force in eight provinces. From these tables it clearly emerges that normally the crops were not rated uniformly for the entire province, but that each province was divided into circles comprising groups of parganas, each circle having a separate schedule containing

1. Āīn, I, pp.348-85.

single cash-rates for different crops. Each circle was named after a pargana lying within it. Under each province, we are given the lists of parganas constituting the various dastūr-circles within the province; these precede the dastūr-tables themselves. Usually a dastūr-circle does not cross the boundaries of a sarkār; and in some cases the limits of a circle coincide with those of a single sarkār. But a few circles contain groups of parganas drawn from more than one sarkār. The parganas constituting a circle were normally contiguous, but in exceptional cases isolated blocks also occur. The circles varied in size: While some contained two or three sarkārs, others comprised just one pargana.

To judge from Abūl Fazl's statements,[1] the final cash rates in force at the time the Āin was compiled, were averages of the rates fixed for the period from the 15th to the 24th R.Y. Only the rates on the high-grade crops (jins-i ʿAla) are said to have been formulated on the basis of the highest rates imposed during the ten-year period.[2] The rates annually fixed from the 6th to the 24th R.Y. are recorded in the Āin in a

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1. Āin, I, 348; Akbarnāma, III, pp.282-3.

2. Āin, I, pp.298-300. For the interpretation given in our text, see Irfan Habib, Agrarian System, pp.209-12.

set of tables entitled Āīn-i Nuzdehsāla[1] (The Āīn of 19 years). In these tables the dastūrs are given province-wise, in single rates or pairs (lowest and highest rates).[2] From the 6th to the 9th R.Y. the crops are given a single rate each throughout a province; indeed in many cases the same rate prevails throughout the whole zabtī region. Since the rates for all the provinces (except Malwa) were practically the same during these years, one would infer that uniform productivity as well as uniform prices had been assumed for the then limits

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1. Āīn, I, pp.303-47.

2. The sūbas themselves were formed in 15; and Abul Fazl, or his source, must have had first to assign the earlier rates for divisions of varying sizes to the respective sūbas in order to compile the 19-Year Rate Tables. The question also arises as to whether the earlier rates were fixed for the same circle for which the final dastūrs were separately formulated. It is unlikely that this was so; the rates might well have been fixed for entire sarkārs (the earlier larger ones, as listed in the Baburnāma, Haidarabad Codex, ff.292a-293a). Since the later sūba corresponded to a single sarkār of the earlier period, this may explain why even after the 10th regnal year, only a single rate continues to appear under that sūba. The variations and range might have increased with the 15th year, because the rates were retrospectively calculated for the new dastūr-circles formed as part of the 'Karori Experiment' of the 20 year.

of the Empire. From the 10th year there appears a change: The rates are much lower than the rates during the previous three years and for most of the crops two rates, the maximum and the minimum, are entered (except in ṣūbas Lahore and Malwa). The rates now vary from province to province. It is difficult to say how this change was brought about, whether, that is, this was done by assuming different prices or estimating different yields for the different localities, or both.[1]

The rates from the 15th (in some cases the 14th) to 24th R.Y. on which the final cash-rates were supposedly based, were still lower than the rates of the previous years: In the rates for inferior crops the decline is still more marked and the variations from province to province and year to year are also quite pronounced.

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1. Abu'l Faẓl (Āʾīn, I, p.347) tells us that in the 11th R.Y. the taqsīm papers were collected to revise jamaʿ figures. But while the papers called taqsīm gave data about the revenue and area, they did not ordinarily contain information on yields and prices (Cf. Irfan Habib, Agrarian System, p.203 f.n.4). The taqsīm papers, therefore, might have been used to revise the jamaʿ, but of themselves, they could not have helped in revising the dastūrs.

The figures in 'the Āīn of 19 years' are generally without fractions below 1/2. The final cash-rates are usually given in dāms with complex fractions expressed in jītals, and this gives at first sight the impression that the rates were determined by an exact calculation based on crop rates and prices.

But from a closer study of the tables it appears that in actual fact the same figures (i.e. the same fractions (in jītals) accompanying the same whole numbers) recur many times over under different crops and circles. The reason why the figures go into fractions seems to lie in the standard enhancement of about 11% on the rates originally fixed in whole numbers, the enhancement being on account of the larger bīgha, consequent upon the introduction of the Gaz-i Ilāhī.

The gaz-i Ilāhī was introduced in 1586.[1] Abul Fazl

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1. Āīn, II, p.297.

gives minutely detailed figures showing that the difference between the new bigha meant an addition to the size of the old bigha amounting to $\frac{293,364}{2,906,636}$ or 10.093%.[1] From this, one would assume that the dasturs should have been raised by this percentage. But the documents relating to land-grants suggest that the revenue administration actually assumed a larger difference. The evidence of these grants is set out in the table below:

Table

Locality	A Total Original Area		B Deduction Bigha	B Deduction Biswa	C Net Bigha	C Net Biswa	B as % of A	B as % of C
Bahraich (U.P.)[a]	400	bighas	42	8	357	12	10.6	11.857
Bahraich (U.P.)[a]	240	..	27	16	212	4	11.6	13.101
Jakhbar[b]	170	..	17	19	152	1	10.5	11.805
Batala (Panjab)[c]	120	..	12	12	107	8	10.5	11.732
Batala (Panjab)[c]	104	..	10	19	93	7	10.5	11.732
Batala (Panjab)[d]	90	..	9	9	80.	11	10.5	11.732
Batala (Panjab)[e]	30	..	3	3	26	17	10.5	11.732
Jakhbar[f]	10	..	1	7	8	18	11.0	12.360

(a) U.P. Record Office, Allahabad, no.1177.
(b) B.N. Goswamy and J.S. Grewal, The Mughals and the Jogis of Jakhbar, Simla, 1967, Doc. II (p.60).
(c) India Office Library, I.O. 4438:No.7.
(d) I.O. 4438: No.25.
(e) I.O. 4438: No.11.
(f) The Mughals and the Jogis of Jakhbar, op. cit., Doc. III(p.80).

1. Āin, II, p.297. cf. Irfan Habib, Agrarian System, p.355.

There is a possible error in the second set of figures, and in the last, the area of the total grant is so small that rounding would obscure the precise conversion rate. Overlooking these two exceptions, the additional area covered by the new _bigha_ was clearly assumed to have been about 11.7 or 11.8%.

An enlargement of the area of the _bigha_, assumed to be about 11.8%, would naturally have necessitated an enhancement of the _dastūrs_ in the same proportion. It would appear that to carry out this enhancement the Mughal administration adopted a conversion schedule, which now by a simple device, we can actually reconstruct.

This device may be described as follows: When we tabulate the final rates (_dastūrs_) in ascending order, it soon transpires that between every two consecutive rates the difference normally amounts to one _dām_, 3 _jitals_, and occasionally to one _dām_, 2 _jitals_. One conjectures easily that in the conversion table one _dam_ of the pre-1586 schedules was ordinarily deemed equivalent to one _dām_, 3 _jitals_ (representing an enhancement of 12%) in the new schedules, the occasional smaller equivalent (1 _dām_, 2 _jitals_) of an additional _dām_ in the old schedule is clearly designed to bring the cumulative enhancement to below 12%. The smaller equivalent is first put against the 14th _dām_ of the pre-1586 schedule and recurs at an interval of usually 20 _dāms_, e.g., at 34th, 53rd, 74th, 93rd and 114th (the position of 93rd

is not precisely fixed, owing to the fact that the equivalents of 92 to 95 *dāms* do not appear among the final *dastūrs*). In our reconstructed conversion schedule, 100 *dāms*of the old scale correspond to 111 *dāms*, 20 *jītals* of the *dastūrs*. For 200 *dāms* the corresponding figure (drawn from the *dastūrs*) is exactly double (223 *d.*, 15 *j.*). The increase in both cases is 11.6%. We may now set out the conversion schedule as reconstructructed by us. All the rates actually found in the final *dastūrs* are asterisked.

Schedule

OLD	NEW		OLD	NEW	
dāms	*dāms*	*jital*	*dāms*	*dāms*	*jital*
1	1	3	31	*34	17
2	2	6	32	*35	20
3	3	9	33	*36	23
4	4	12	34	*38	0
5	5	15	35	*39	3
6	6	18	36	*40	6
7	7	21	37	*41	9
8	8	24	38	*42	12
9	9	2	39	43	15
10	10	5	40	*44	18
11	11	8	41	*45	21
12	*12	11	42	*46	24
13	13	14	43	*48	2
14	*15	16	44	*49	5
15	16	19	45	*50	8
16	*17	22	46	*51	11
17	*19	0	47	*52	14
18	*20	3	48	*53	17
19	21	6	49	*54	20
20	*22	9	50	*55	23
21	*23	12	51	57	1
22	*24	15	52	*58	4
23	*25	18	53	*59	6
24	*26	21	54	*60	9
25	*27	24	55	*61	12
26	*29	2	56	*62	15
27	*30	5	57	*63	18
28	*31	8	58	*64	21
29	*32	11	59	65	24
30	*33	14	60	*67	2

61	68	5	111	*124	3
62	*69	8	112	*125	6
63	70	11	113	*126	9
64	71	14	114	*127	11
65	72	17	115	*128	14
66	73	20	116	*129	17
67	74	23	117	130	20
68	*76	1	118	*131	23
69	*77	4	119	133	1
70	78	7	120	*134	4
71	79	10	121	135	7
72	80	13	122	*136	10
73	*81	16	123	137	13
74	*82	18	124	*138	16
75	*83	21	125	139	19
76	*84	24	126	140	22
77	86	2	127	142	0
78	*87	5	128	*143	3
79	88	8	129	*144	6
80	*89	11	130	*145	9
81	90	14	131	146	12
82	*91	17	132	*147	15
83	92	20	133	*148	18
84	*93	23	134	149	21
85	*95	1	135	150	24
86	*96	4	136	152	2
87	97	7	137	153	5
88	98	10	138	*154	8
89	99	13	139	155	11
90	*100	16	140	*156	13
91	101	19	141	157	16
92	102	21	142	158	19
93	103	24	143	159	22
94	105	2	144	161	0
95	*206	5	145	162	3
96	*107	8	146	163	6
97	108	11	147	164	9
98	109	14	148	165	12
99	110	17	149	166	15
100	*111	20	150	167	18
101	*112	23	151	168	21
102	114	1	152	169	24
103	115	4	153	171	2
104	*116	7	154	172	4
105	117	10	155	173	7
106	118	13	156	174	10
107	*119	15	157	175	13
108	120	19	158	176	16
109	121	22	159	177	19
110	*123	0	160	178	22

161	180	0	181	202	10
162	181	3	182	203	13
163	182	6	183	204	16
164	183	9	184	205	19
165	184	12	185	206	22
166	185	15	186	208	0
167	186	18	187	209	3
168	187	21	188	*210	5
169	188	24	189	211	8
170	*190	2	190	212	11
171	191	5	191	213	14
172	192	8	192	214	17
173	193	11	193	215	20
174	194	14	194	216	23
175	195	17	195	218	1
176	196	20	196	*219	3
177	197	23	197	220	6
178	199	1	198	221	9
179	200	4	199	222	12
180	201	7	200	*223	15

Our reconstructed schedule obtains a particularly direct corroboration from the rates stated for the water-plant, singhara. This crop has the same rate, viz., 100 dāms, in all sūbas under the 'Āīn-i Nauzdahsāla' Tables; and the final dastūrs too happen to be uniform, being 111 dāms 20 jītals.[1] Clearly the latter is a flat enhancement of the former. Moreover, the figure in the final dastūrs is precisely the/worked out for conversion schedule. one

Only a few rates among the final cash-rates fall outside the rates based on our conversion schedule; and these, if they are not errors of transcription, may represent a deliberate

1. Such variations as 115 dāms, 8 jītals, are due to misplacings of dots, substituting pānzdah for yāzdah, and hasht for bist.

revision undertaken after 1586. Some such figures are, in fact, whole numbers, which would suggest that here the converted rate was replaced by a fresh estimate, which would naturally be in a whole number.

The extent to which such revision might have occurred may be judged from the following table in which the number of rates based on the conversion table as against the total number of all rates is given for some major crops.

Table I

<u>Dasturs</u> Corresponding to the 'Conversion Table'

Province	Total <u>Dastūr</u>△	Crops				
		Wheat	Barley	Jowar	Sugar-cane	Indigo
Agra	28	25	24	28	24	18
Delhi	27	22	24	25	24	23
Allahabad	15	13	13	13	7	13
Awadh*	12				11	
	6	5	6	6		5
Lahore*	8	6	5		7	
	6			5		6
Ajmer	9	9	9	9	9	8
Multan	3	1	2	2	3	3
Malwa	1	1	1	1	1	1

* For certain crops, the <u>dastūrs</u> are not recorded under some circles. So two totals are shown are under the <u>sūbas</u> affected.

Even if we assume that all the rates which do not conform to the 'conversion schedule' were the result of a revision, it is obvious that very few rates were in fact revised after the rates were refixed in 1586. We must then take it that most of the final dasturs in the Āīn are the same as were laid down during the five years, 1581-86. If, therefore, we re-convert them, by using our conversion table, to the pre-bīgha-i Ilāhī rates, we can test whether they can possibly be the actual averages of the rates entered for the 15th to the 24th R.Y., or in the case of high-grade crops, are equal to the highest reached during that period.

Owing to the fact that the rates in the 'Āīn of 19 years' are not given for different dastūr-circles, a direct check is not possible. But even so, a simple device might be used.[1] The rates of the 19 years are given province-wise; and though the rates for individual dastūr-circles are not furnished the range of the rates for different circles for any year is indicated by the lowest and highest rates. Now, if the final dastūrs are averages of the rates of the years 15 - 24 R.Y., no rate under any dastūr-circle could possibly have exceeded the average of the highest rates of the ten years in the province, nor could it be less than the average of the lowest rates during

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1. Cf. Irfan Habib, Agrarian System, p.211.

the ten years. Table II sets out the highest and lowest rates amongst the dastūr-circles for each crop, along with the averages of the highest and lowest rates, 15-24th R.Ys.

Table II

Crops	Rates, 15th-24th R.Y. Average of Maximum Rates	Rates, 15th-24th R.Y. Average of Minimum Rates	Final Dastūrs Converted to Pre-1586 figures Highest	Final Dastūrs Converted to Pre-1586 figures Lowest
Agra				
Wheat	68.4	42.4	62	52
Gram	41.9	22.6	40	30
Barley	45.7	25.6	44	34
Mustard	31.6	21.7	30	26
Peas	32.0	17.5	30	20
Rice	53.3	35.2	57	40
Juar	39.5	25.6	40	29
Lahdhra	28.4	19.3	28	21½
Cotton	85.4	65.1	84	76
Illahabas				
Wheat	75.4	45.2	58	52
Gram	49.2	26.2	37	34
Barley	56.5	30.9	60	36
Mustard	44.6	25.2	36	25
Peas	41.5	16.6	36	20
Rice	58.0	35.5	44	40
Juar	36.9	26.2	36	31
Lahdhra	36.8	20.3	-	-
Cotton	112.0	71.3	86	80
Awadh				
Wheat	53.4	42.4	40	24
Gram	39.3	25.8	26	22
Barley	41.4	28.2	34	22
Mustard	30.6	23.6	22	18
Peas	-	-	-	-
Rice	39.9	29.7	39	24
Juar	35.7	25.3	29	22
Lahdhra	-	-	-	-
Cotton	95.9	69.7	-	-

<u>Delhi</u>				
Wheat	63.0	37.09	58	45
Gram	38.8	20.0	33	26½
Barley	38.6	20.3	38	23
Mustard	29.4	18.6	32	17
Peas	30.9	15.9	28	18
Rice	54.7	31.2	57	30
Juar	34.1	21.9	34	24
Lahdhra	25.3	18.5	26	19
Cotton	97.0	67.6	96	80
<u>Lahore</u>				
Wheat	46.7	39.1	50	30
Gram	30.4	25.5	32	28
Barley	32.0	25.3	42	28
Mustard	27.6	23.6	28	24
Peas	24.5	19.6	-	-
Rice	41.9	32.9	44	30
Juar	35.8	28.2	36	28
Lahdhra	26.0	21.5	28	21
Cotton	89.2	79.5	82	68
<u>Multan</u>				
Wheat	45.5	37.5	50	48
Gram	33.7	22.3	-	-
Barley	34.1	24.8	44	27
Mustard	33.4	23.8	40	26
Peas	20.4	19.2	-	-
Rice	41.0	36.9	44	44
Juar	34.9	29.1	34	32
Lahdhra	28.0	23.4	40	26
Cotton	89.5	71.8	84	78

We find that in four provinces (Agra, Delhi, Allahabad and Awadh), the highest and lowest of the final <u>dasturs</u> fall well within the range of the rates for the ten years. Out of 9 crops (other than high grade crops), which we have taken into account, the only exceptions are rice in Agra and Delhi, barley in Allahabad and mustard in Delhi, where the highest final <u>dasturs</u> exceed the averages of maximum rates of the 10 years.

The probability that the final _dastūrs_ were mostly averages of the rates of the decennial period, R.Y. 15-24, is reinforced by the _dastūrs_ for the circle _Havelī_ Agra. This circle has the highest _dastūrs_ among all the circles of the Agra _sūba_, for gram, barley, juar, bajra and mustard (see Appendix). It may be assumed that the same circle, containing the capital, contributed the highest rates for most of the ten years (15th - 24th R.Y.) as well. We discover that in fact, the average of all the maximum rates from the 15th to 24th R.Y. are strikingly close to the rates in this circle for the five crops mentioned. On the other hand, in the case of Peas for which the rate for the _dastūr_-circle _Havelī_ Agra is lower than the rates in seven other circles of the _sūba_, the average of the maximum rates for the decade 15th - 24th R.Y. considerably exceeds that of the Agra circle.

The position in the _sūbas_ of Lahore and Multan as depicted in the Table we have set out is, however, different. Here the highest among the final _dastūrs_ in all the crops considered (except for jowar in Lahore) exceed the average of maximum rates of the 10 years. In Lahore, the lowest rates for wheat, rice and cotton fall far below the averages of all minimum rates for the years 1570-80.

In the case of _sūba_ Lahore, one could perhaps attribute the excess of the highest final rates over the arithmatic mean of the maximum rates to the enhancement in demand carried

out after the court shifted to Lahore in 1586.[1] But there are two objections to this conjecture. The Lahore dastūrs are not ordinarily higher than those of the other provinces; indeed, these usually appear to be in a lower range (see Appendix). It is, therefore, difficult to assume that these could be the result of a 20% increase. Secondly if we lower the Lahore rates by one-sixth, the lowest rates in the final dastūrs would, in the case of all the crops selected by us for our table, be much less than the mean of the lowest of the rates for the ten years. There is, lastly, the crucial point that the final dasturs in the Lahore province accord with ~~with~~ the main steps in the conversion table for the 1586 enhancements. A 20% increase subsequent to 1586 would most certainly have ruled out such conformity.

For high-grade crops our test is more direct and definite: In each province the highest among the maximum rates of the years 1570-71 to 1579-80 should be equal to the highest rate on the crop among the dastūr-circles of the same province (converted to pre-1586 figures.

For this test, I have treated as high-grade crops, those whose rates are higher than 100 dāms per bigha in the final

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1. Akbarnāma, III, p.748.

dastūrs, and from amongst these, I have picked out the highest rates from amongst the rates for 10 years and from amongst the final dastūrs, for poppy, paunda sugarcane, ordinary sugarcane and indigo. Cotton has been treated by me as an ordinary crop, though in the sūba of Delhi the maximum dastūr on cotton exceeds 100 dāns. The final dastūrs are scaled down to pre-1586 figures by using our conversion schedule.

Table III

Crops	15th-25th R.Y.s Maximum Rates	Final Dastūr converted to pre-1586 figures Highest Dastūr
Agra		
Poppy	130	130
Sugarcane (Ponda)	200	214
Sugarcane (Sāda)	174	166
Indigo	140	146
Allahabad		
Poppy	130	140
Sugarcane (Ponda)	200	215
Sugarcane (Sāda)	180	128
Indigo	180	146
Awadh		
Poppy	130	140
Sugarcane (Ponda)	200	215
Sugarcane (Sāda)	144	120
Indigo	136	146
Delhi		
Poppy	130	138
Sugarcane (Ponda)	200	225
Sugarcane (Sāda)	164	124
Indigo	150	148

Lahore

Poppy	130	116
Sugarcane (Ponda)	200	215
Sugarcane (Sada)	120	132
Indigo	134	142

We find that the highest dasturs exceed the highest rates from the R.Y. 15-24 in case of most of the crops: Poppy in all provinces except Agra and Lahore; indigo, in all provinces, except Allahabad; and paunda sugarcane in all provinces without exception. Only in the case of the ordinary sugarcane are the highest dasturs lower than the highest rates during the ten years; but here again sūba Lahore is an exception.

Our general conclusion can then only be that (a) in the case of ordinary crops, the final dasturs could possibly have been simple averages of the rates sanctioned for R.Y. 15th to 24th in all but two sūbas; but (b) in the case of high-grade crops, the final dasturs are not only not averaged from the rates for 15th-24th years, but are not even identical with the highest rates sanctioned during those ten years. They seem rather to have been fixed arbitrarily some time between 1581 and 1586.

II

The next question that arises concerns the share of the agricultural produce that the dastur-ul 'amals represent.

From Abul Fazl's formula for the calculation of the revenue-rates on the basis of Sher Shah's raiš, it has been assumed that Akbar's dastūrs too were designed to represent one-third of the yield per bigha and that the rates so fixed in kind were commuted into cash at prices prevailing in the rural localities,[1] the exceptions consisting only of certain cash-crops.[2] However, there is no plain, direct statement to this effect in Abul Fazl. Neither the officially determined crop-yields nor the prices current in the various dastūr-circles at the time the dastūrs were formulated or were in force, are known. It is, therefore, not possible to apply any direct checks to confirm the assumptions that have so far been generally accepted. But certain available data can still be used to test whether the assumptions are plausible.

The Āīn reproduces the revenue-rates in kind worked out by Sher Shah's administration on the basis of the tax being one-third of the produce, averaged from yield-estimates for three kinds of land.[3] The prices prevalent at the Imperial camp are also furnished in the Āīn.[4] If Akbar's dastūrs too represent

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1. W.H. Moreland, Agrarian System of Moslem India, p.83, and Irfan Habib, Agrarian System, pp.200-12.
2. Āīn, I, p.230. Cf. I. Habib, Agrarian System, p.208.
3. Āīn, I, pp.497-
4. Ibid., pp.53-60.

the same share of the produce, viz., 1/3rd, on dividing the dastūrs by Sher Shah's rates in kind, we should get prices that being country prices, should have been much less than the camp prices.

In Table IV I have set out the prices worked out from the dastūrs. Prices in column 2 are calculated by dividing the average of dastūrs prescribed for the 6th to the 9th years; in column 3, by dividing the average of the dastūrs recorded for the years, 10th - 14th; and in column 4 by dividing the average of the dastūrs for the years 15th-24th. Column 5 gives the prices worked out from the final dastūrs for the circle of Agra. The last column gives the prices stated for the camp in the Āīn.

Table IV (next page)

This table shows a consistent tendency, already marked in the figures in a table prepared by Desai:[1] A tendency towards approximation to the camp prices reported by the Āīn. But this may be seen differently too: A lowering of implied prices from very high levels in Akbar's early years and then an ascent, leading to higher prices that set a range (between

1. A.V. Desai, 'Population and Standard of Living in Akbar's Time - A Second Look', IESHR, XV, No.1, January-March, 1978, pp.64-6, Table 3.

Table IV

Crops	Prices worked out from the Dastūrs							Camp prices in the Āīn
	6th - 9th R.Y.		10th - 14th R.Y.		15th - 24th R.Y.		Final	
	Max.	Min.	Max.	Min.	Max.	Min.		
Wheat	20.83	20.83	13.88	12.69	15.83	9.80	15.53	12
Gram	23.18	22.80	15.30	12.60	12.14	6.57	12.69	8
Adas	26.36	26.36	21.58	14.33	13.37	6.74	13.52	12
Barley	16.24	15.93	10.95	8.91	10.60	5.94	11.42	8
Linseed	46.24	46.24	27.28	22.19	-	-	-	10
Arzan	13.38	13.38	11.00	10.86	9.48	5.06	9.10	8
Mustard	29.74	29.74	27.88	21.56	11.74	7.81	12.47	12
Peas	18.99	18.99	12.29	12.29	8.94	4.83	8.74	6
Fenugreek	-	-	20.10	20.10	19.15	13.87	11.53	10
Maash	19.31	19.31	17.76	15.96	15.06	9.54	15.53	16
Mung	18.53	18.53	16.68	16.06	14.76	10.66	19.00	18
Moth	28.90	28.90	25.66	21.04	11.86	9.94	16.81	12
Jowar	15.46	15.46	14.24	11.13	11.45	7.42	12.96	10
Shamaka	15.19	15.19	14.87	11.30	6.36	4.67	5.83	6
Lahdhra	17.84	17.84	16.36	12.79	10.59	7.17	11.64	8

(All figures in *dāms* per *man-i Akbarī*)

maximum and minimum prices) in which the *Āʾīn*'s camp prices generally fall. Since the *dastūrs* are stated in *dāms*, or in copper money, we can postulate high prices in the earlier period only if we are ready to admit that the value of copper *underwent a significant ascent during the second half of the* 16th century. Though copper rose in relation to silver in the 17th century (and this rise is well documented),[1] it is another matter to assume that there was such a general scarcity of copper in the preceding century, that its value rose even in terms of foodgrains. Perhaps the large use of copper in artillery had something to do with its increasing scarcity. But unless independent evidence for the behaviour of copper prices in the 16th century becomes available, one must reluctantly leave this very much as an open question.

What is of crucial interest is that the final *dastūrs* for the circle of Agra, when divided by Sher Shah's *raiʿ* and further by three, should yield prices that are above the *Āʾīn*'s camp prices, although the *dastūrs* should have given us rural harvest prices, which should have been much lower.

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1. Irfan Habib, *Agrarian System*, pp.387-92; and S.P. Gupta & Shireen Moosvi, 'Weighted Prices and Revenue Rate Indices of Eastern Rajasthan, (c. 1665-1750)', *IESHR*, XII, 2 (1975), pp.191-2 (table).

In table V we restate our evidence in a different fashion. We attempt an estimate of the value in dāms per bīgha of various crops, by multiplying the yields adopted in Sher Shah's schedule, by the prices recorded in the Āīn's for the Imperial Camp. This value would be the maximum possible for the crops of the locality, since the prices are not country prices, but those of the Imperial Camp. Now we can perhaps determine what proportion of the total value, Akbar's final dastūrs represented. Since the prices were presumably those of Agra,[1] we may initially determine the magnitude of demand for the Agra circle.

Column A gives the value in dāms per bīgha of different crops; column B, the dastūr-ul 'amals of Agra circle; and column C, the proportion of value of produce represented by the dastūrs.

Table V (next page)

It is remarkable that even with the 'average yields', adopted by Sher Shah's officials, and the prices given for the Imperial Camp, the dastūrs for rabi crops range from 34.70 to 50.53% of the total value, giving a mean of 44.52: Those for the

1. See Chapter VIII, for a discussion of this question.

Table V

Crops	A Value of yield	B Dastūr	C B as % of A
Rabi			
Wheat	155.52	67.08	43.13
Barley	103.44	49.20	47.56
Gram	82.80	44.02	54.00
Adas	75.60	29.08	38.47
Arzan	48.25	24.38	50.53
Mustard	96.84	33.60	34.70
Peas	63.48	31.32	49.34
Fenugreek	116.40	44.72	38.40
Average			44.52
Kharif			
Mung	139.5	49.50	35.48
Maash	124.00	40.24	32.45
Moth	61.92	29.08	46.96
Jowar	103.50	44.72	43.21
Shamakh	48.24	15.68	32.50
Kodron	90.72	31.32	34.52
Sesamum	120.00	44.72	37.27
Lohdhra	64.60	31.32	48.50
Lobiya	93.00	31.32	33.68
Average			38.29

kharif crops range from 32.45 to 48.50%, so that the mean is 38.29%. Since the Agra prices could not but have been substantantially higher than the rural prices at which the peasant must have actually sold his produce (or rates in kind commuted into cash) the real ratio of the *dastūr* to value of yield must have been substantially higher than what we get in our table V.

While there seems no means of determining the difference between rural and urban prices in 1595, it will not perhaps be far wrong to assume that with the then available means of transport, the difference in the two sets of prices must have been of the order of at least 10%. Making an allowance for such a difference between rural and urban prices, we would have to assume that the dasturs represented about a half of the average produce as estimated by the administration. It is then quite probable that one-half and not one-third was set as the share of produce for formulating the *dastūrs*. The variations from the standard that we have seen in our table V could be explained by supposing that the relative prices of various crops in the rural localities (adopted in framing the *dastūrs*) were different from those given for the Imperial Camp or Agra by Abul Fazl.

However, there seems still another possibility, namely, that Akbar's administration had altogether ignored the average yields prepared by Sher Shah's officials. The latter were based upon an improbable assumption which was that the

proportion of irrigated and unirrigated lands covered by all the crops, whether of kharif or rabi, was equal: As a result of this premise, the 'average yields' for all kharif crops had been invariably over estimated, while the yields of certain high grade rabi crops were under estimated.[1] We find, in fact, that the dastūrs represent a lower share of the value of the 'total produce' as calculated on the basis of Sher Shah's raiʿs, in the case of kharif crops than in that of rabi. If the inflated yields of Sher Shah's raiʿs were scaled down the total share of the produce claimed in revenue should have been around a half; and one is tempted to conclude that Akbar's administration in framing its dastūrs just flatly laid claim to one-half of the total produce.

That the Mughal claim was laid on not only one-third of the value of the produce but on a much higher share can be shown by still another means, which does not require us to make any assumption about the use of Sher Shah's raiʿ by Akbar's administration. Official estimates of the value of output per unit of area of various crops are available for Agra for 1870.[2] Had the dastūrs approximated to one-third of the value

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1. See Chapter IV.

2. Atkinson, IV, part II, p.368.

of the produce, they should also have approximated to a third of the value of the officially estimated yield in 1870, after adjustments to allow for the rise in prices. The scale of the rise in prices between 1595 and 1870 can be worked out from the prices in the Āin and from the prices for the decade 1866-75, reported from Agra. The rise in rural prices must have been greater than in the market prices, since with improved means of cummunication and transport, the margin of difference between rural and urban prices must have contracted during the 19th century.

Column A in the table VI gives the Āin's dastūr for certain crops for the circle of Agra, while column B gives the value of output per unit of area (here converted into dāms per bīgha-i Ilāhī, from rupees per acre), as estimated in 1870.[1] Columns C and D sg show the result, respectively, of 1/3 and 1/2 of B divided by A. Column E exhibits the 1870 market prices divided by the Āin's prices.

Table VI

Crops	A Dastūrs	B Calue of output	C ($\frac{1}{3}$ x $\frac{B}{A}$)	D ($\frac{1}{2}$ x $\frac{B}{A}$)	E 1870 price, divided by Āin's price
Wheat	67.08	835.20	4.1	6.2	5.0
Barley	49.20	418.40	3.5	4.3	6.0
Gram	44.72	300.00	2.2	3.3	5.2
Juar	44.72	422.40	3.1	4.7	4.6
Bajra	31.32	451.68	4.8	7.2	6.0
Average			3.50	5.14	5.36

1. Atkinson, IV, part II, p.368.

It can now be seen that while on average the market prices went up 5.36 times since 1595, the value of one-third of the produce in 1870 amounts, on average, to only 3.54 times the dastūr for Agra. On the other hand, the value of half the produce as estimated in 1870 was 5.14 times the Āīn's dastūrs. In other words, the enhancement in value of yield keeps pace with the rise in prices only if it is assumed that the dastūrs represented a half and not a third of the produce. Indeed, since harvest prices are likely to have risen rather more than urban market prices, the relative difference between the dastūrs and the average estimated value of the crops for 1870 divided by 2, should be expected to exceed the rise in the market prices between 1595 and 1870. This is practically what we get from Table VI.

III

What we have discussed uptill now has been concerned with the share of produce represented by the dastūrs of the Agra circle. The next question to answer is whether the Mughal administration was intent on claiming an equally high share of the produce in other localities as well. For this, we have to study the trends and ranges in variation of the dastūrs for various crops, compared with the dastūrs for the circle of Agra. Appendix sets out the dastūrs for 11 major crops in all circles, indexed with the dastūr for Agra (as, = 100).

One notices that barring exceptions the range of variation for most of the crops is not very wide. In nine out of the twelve crops considered, the dastūrs for Agra circle is usually the highest. The main exceptions are cotton and indigo, where most of the dastūrs, in provinces other than Lahore and Ajmer, are higher than those of Agra.

If we arrange the dastūrs of major crops, with dastūrs for Agra as 100 into intervals (Table VII), it becomes clear that the dastūrs of all the provinces except Ajmer, tend to form clusters, for most of the crops.

Table VII (next page)

For wheat the range within which the dastūrs are concentrated is 81-100, in Agra, Allahabad, Awadh and Lahore; but in Delhi the range is a little wider, i.e. 71-100. For barley too the range in Agra and Allahabad is 81-100; in Awadh and Lahore 71-80. In Delhi it is substantially wider, viz., 61-100. For ordinary food crops, viz., gram, juar and bajra, the dastūr indices in all the provinces except Ajmer are closer to each other and are within the range 71-90. For rice, the dastūr indices fluctuate most sharply; even in the Agra province the range is as wide as 71-110, while Delhi, as usual, offers

Table VII

Wheat

	Agra	Delhi	Allahabad	Avadh	Lahore	Ajmer
						2
101 - 110	2		1			1
91 - 100	20	6	8	1		
81 - 90	6	13	6	5	5	3
71 - 80		6			1	2
61 - 70		1			1	
51 - 60					1	
41 - 50						1

Barley

	Agra	Delhi	Allahabad	Avadh	Lahore	Ajmer
			1			2
101 - 110						1
91 - 100	7	2	5	1	1	
81 - 90	19	11	8	1		
71 - 80	2	10		4	5	1
61 - 70		3			1	4
51 - 60						
41 - 50						1

Rice

101 - 110	9	2				
91 - 100	6	3				
81 - 90	4	6	4		3	2
71 - 80	9	12	9	7	2	4
61 - 70		2		5	2	
51 - 60		1			1	1
41 - 50						1

Gram

						2
101 - 110						
91 - 100	4		4			1
81 - 90	20	7	8	2	4	1
71 - 80	4	14	2	4	3	3
61 - 70		6				1
51 - 60						
41 - 50						1

Juar

101 - 110						
91 - 100	2					1
81 - 90	20	12	8	6	7	1
71 - 80	6	13	6	6	1	2
61 - 70		1				3
51 - 60		1				1
41 - 50						
31 - 40						1

Bajra

101 - 110						
91 - 100	2	3			5	1
81 - 90	19	11		4	1	1
71 - 80	6	12		8	2	2
61 - 70		1				2
51 - 60						2
41 - 50						
31 - 40						1

Sugarcane

	2					
101 - 110	4					
91 - 100	15	4	3	2	5	
81 - 90	7	23	6	10	2	
71 - 80			3			6
61 - 70						
51 - 60						2

Cotton

		9				
101 - 110	26	18	12	10	2	
91 - 100	2			2	4	1
81 - 90					2	3
71 - 80						2
61 - 70						2
51 - 60						
41 - 50						1

Indigo

101 - 110	26	23	14	6	1	
91 - 100	2	4			5	
81 - 90					2	5
71 - 80						2
61 - 70						
51 - 60						2
41 - 50						

the widest range, 51-110; in Allahabad and Awadh the fluctuations are moderate, falling within 71-90 and 61-80, respectively. For cash crops as expected, the dastūr-indices makes narrow clusters, ordinary sugarcane in the Agra province being the lone exception. The modal class for sugarcane is 81-90, for cotton and indigo, 90-110, though here Ajmer offers an exception.

Furthermore, it seems that there were blocks of contiguous dastūr-circles, where the range of variation in dastūrs for different crops was very narrow. It would appear, then, that while sanctioning dastūrs for different localities, the dastūrs within a region were considered in relation to a regional standard, which they either equalled or around which they normally clustered.

Having the variations as they are, we may see if these variations were intended to conform to the difference in productivity and levels of prices as may be inferred from some of Abul Fazl's statements.[1] Since we have neither contemporary estimates of yield nor prices for localities other than for Agra, we can only invoke help from 19th century statistics. There are, it is true, certain difficulties in using modern data. First, the likelihood of effects of railways on prices.[2] From the 19th century statistics, therefore, one should use prices for the period 1861-70, the earliest decade for which they are available, and which are least likely to have been affected by railways. The yields for the same period are difficult to come by; the official Agricultural Statistics begin to give yield estimates from 1892, and even then the general estimates are not available, since the estimates are furnished separately for irrigated and unirrigated lands. For certain districts, however, we have estimates for 'normal yields' in the Settlement Reports and the volumes of Atkinson's Statistical Account. These general yields are based on the older methods of estimation and so are more

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1. Akbarnāma, III, pp.282-3; Āin, I, p.348. Cf., Irfan Habib, Agrarian System, pp.201-09.

2. How the railways tended to have a levelling effect on prices between 1860s and 1890s is shown by Zahoor Ali Khan in IHR, Vol. IV, No.2, 1978.

likely to conform to Mughal methods. From these data I have constructed hypothetical rates for wheat and barley by multiplying the yields by average prices for 1861-70, and then indexing them, with the hypothetical rate at Agra as 100. In Tables VIII (a) and (b), these are compared with actual <u>dastūr</u>-indices of the circle to which the modern districts correspond. Columns B and C give prices and yields indexed by taking those of Agra as 100.

Table VIII

Districts	A <u>Dastūr</u> Indices	B Prices Indices	C Yield Indices	A Hypothetical Rates (Yield x Price)
(a) Wheat				
Agra	100.00	100.00	100.00	100.00
Bulandshahr	86.70	75.51	123.80	93.56
Meerut	86.70	78.70	120.94	94.61
Delhi	93.92	92.54	95.96	88.29
Agra	89.98	87.21	120.94	100.71
Etawa	89.98	88.61	107.06	94.72
Saharanpur	83.36	86.72	116.68	101.13
(b) Barley				
Agra	100.00	100.00	100.00	100.00
Bulandshahr	77.24	94.48	128.79	121.54
Meerut	77.24	87.14	123.91	109.15
Delhi	86.34	93.20	88.33	69.17
Aligarh	81.79	125.17	112.45	140.77
Saharanpur	72.76	105.44	163.94	171.93

It is apparent from this comparison that the variations in dastūrs do not correspond to modern yields, or to modern yields multiplied by modern prices. On the other hand, the variations in dastūrs generally show a remarkable accord with the variations in modern (1861-70) prices in the case of wheat and fair accord in that of barley.

Whatever be the impression gathered from this comparison, it suffers from a serious defect. All the dastūr-circles that we have studied here fall within a limited geographical region (Delhi and Western U.P.). Even in modern Agricultural Statistics from 1897 onwards the yield estimates are not given for individual districts but for big blocks consisting of many districts. It will be unfair to expect from Mughal officials a more detailed estimation of yields. However, since we do not have 'average yields' for other regions we can only get some broad hints from the yield estimates for irrigated and unirrigated lands given in the Agricultural Statistics for 1892. As a sample we can consider Haryana. We have already noticed that in this region the yields were much lower than in U.P., for irrigated as well as unirrigated lands.[1] It seems that the low dastūrs for this region reflect these low yields.

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1. Vide Chapter IV.

The extent to which local variations in dastūrs might have been affected by prices can be studied rather more definitely. The prices of wheat, barley and juar for the decade 1861-70 are available for almost all the districts of U.P. and Panjab, the comparison of dastūr and price indices can be extended to all circles falling within U.P. and Panjab.

In making this comparison, a word is necessary about choice of the index-base. It has to be borne in mind that while Agra was the capital and largest city of the Empire in 1600, it was reduced to the position of an ordinary town by 1872. (Population : 163,935). It is, therefore, obvious that the relative price-levels at Agra compared with those of the other localities should have been much higher in 1600 than in 1861-70. In any comparison of the dastūr with modern prices, Agra, having so altered in its position, can hardly serve as a satisfactory index-base. Delhi seems to offer a much better base, since it was a sūba-capital, but not a large town by any means, in 1595. ('The city is in ruins; but the grave-yards are well populated', says Abul Fazl).[1] After the Mutiny, it was similarly a small decaying town (population in 1882: 173,393). I have, therefore, taken the dastūrs and prices at Delhi as base, = 100. Since the index figures for Agra follow in the next line, the reader can easily convert the dastūrs and prices set against any circle into

1. Āīn, II, p.514

what they would have been, with Agra as base, by dividing them by the figure set out for Agra and shifting two decimal places.

Table IX

Dastūr-circles	Wheat		Barley		Juar	
	Dastūr	Price 1861-70	Dastūr	Price 1861-70	Dastūr	Price 1861-70
Delhi	100	100	100	100	100	100
Agra	106.48	100.71	115.82	107.29	133.25	121.10
Etawa	95.80	96.33	94.75	112.51	106.53	119.55
Biana	100	N.A.	90.81	N.A.	89.98	N.A.
Kanauj	96.57	98.03	94.16	104.96	97.14	119.60
Sakit	102.92	N.A.	86.34	N.A.	87.48	N.A.
Bhogaon	92.32	92.98	89.45	94.48	106.53	119.54
Sikandarpur Atroji	89.98	N.A.	81.54	N.A.	87.48	N.A.
Phaphund	101.14	96.33	94.71	112.51	114.04	119.55
Kol	95.81	94.80	94.75	104.69	106.53	106.96
Thana Farida	92.32	91.54	89.45	105.99	100	104.61
Akbarabad	101.14	94.80	108.29	93.20	106.67	106.96
Marahra	89.98	N.A.	81.54	N.A.	87.48	N.A.
Panipat	92.32	95.70	94.71	100.00	100	104.32
Merath	92.32	92.07	89.45	94.72	100	126.04
Baran	92.32	82.02	89.45	107.29	100	106.96
Jhajhar	97.62	96.35	97.31	102.26	100	105.87
Palwal	96.66	N.A.	86.34	N.A.	80.05	N.A.
Rohtak	92.32	96.35	81.6	102.26	106.67	105.87
Badaun	79.87	88.85	107.82	102.50	112.28	107.99
Hisar	99.37	103.35	94.71	99.50	113.23	105.95
Gohana	92.32	99.85	100	100.87	113.23	105.91
Sirsa	92.32	103.35	100	99.50	113.23	105.95
Rewari	94.99	N.A.	84.06	N.A.	80.05	N.A.
Taran	96.62	N.A.	45.69	N.A.	80.05	N.A.

Sohna	96.66	N.A.	86.34	N.A.	82.56	N.A.
Deoband	88.65	94.28	84.27	115.58	79.98	133.63
Samana	81.71	97.33	79.01	91.61		
Sardhana	92.32	98.22	89.45	99.73	100.00	149.25
Indri	92.32	95.70	86.71	100.00	100.00	107.86
Sirhind	76.68	N.A.	71.14	N.A.	75.05	N.A.
Thanesar	94.02	92.23	74.94	105.43	103.34	104.12
Tihara	81.75	82.30	91.95	83.65	100.00	85.01
Samana	76.68	N.A.	68.21	N.A.	75.05	N.A.
Sambhal	88.63	82.38	79.00	89.12	109.89	104.50
Chandpur	86.98	88.34	84.27	98.79	115.37	111.76
Lakhnaur	79.87	N.A.	72.76	N.A.	109.42	N.A.
Allahabad	96.06	111.62	94.75	120.09	103.33	132.65
Jalalabad	92.32	115.70	95.29	126.38	106.73	137.07
Bhadoi	102.89	116.49	-	124.74	-	126.31
Benaras	102.92	117.29	113.18	134.23	119.55	110.86
Jaunpur	102.92	100.32	-	117.34	119.55	116.63
Mongera	92.38	102.55	100	109.98	106.67	116.24
Chunar	96.12	N.A.	95.69	N.A.	119.90	N.A.
Ghazipur	96.12	N.A.	97.23	N.A.	119.90	N.A.
Karra	89.62	N.A.	-	N.A.	101.78	N.A.
Kora	103.94	N.A.	81.46	N.A.	99.16	N.A.
Kutia	89.62	N.A.	81.46	N.A.	103.37	N.A.
Jajmau	96.62	103.08	94.31	109.97	96.78	119.24
Manikpur	92.32	89.40	100	92.29	106.67	95.41
Rae Bareli	99.37	95.30	107 . 81	126.38	113.23	105.32
Awadh	92.32	92.70	92.09	99.41	106.67	104.01
Ibrahimabad	93.32	N.A.	93.17	N.A.	113.23	N.A.
Kishni	92.32	91.60	100	101.65	106.67	112.20
Bahraich	86.98	75.81	89.41	68.06	113.23	71.78
Faizabad	88.73	78.26	84.23	74.56	100	71.78
Kheransa	87.62	65.79	89.41	67.23	115.61	68.34
Lahore	85.21	97.96	108.29	93.28	119.55	111.40
Parasroor	85.21	84.30	89.45	78.17	113.23	112.97

Haibatpur	87.31	100.18	89.45	93.24	113.23	104.78
Jalendhar	85.21	87.78	-	-	-	-
Rohtas	70.98	-	63.38	N.A.	93.33	N.A.
Sialkot	53.46	84.30	89.45	78.17	113.23	112.97
Hazara	88.76	100.64	89.45	99.29	113.23	130.36
Batala	73.35	N.A.	72.76	N.A.	-	N.A.

Note: Rates for these crops are not given under six dastūr-circles of sūba Awadh (Khairabad, Pali, Bharwara, Gorakhpur, Lucknow and Unam).

For the localities falling within U.P. the table shows a fairly close relationship between the revenue rates and price indices for wheat. There are only a few exceptions, and of these again some can be explained. For example, the price index for Allahabad and neighbouring circles is higher than the dastūr-index. But this is to be expected since in 1586 Allahabad was yet to emerge as an important city. But in the Haryana area the dastūr-indices are generally lower than price indices. This is what we should have expected because of low yields in Haryana in the 19th century, and probably, therefore, in the 16th century as well (see above). In the case of barley and juar the correlation is not so obvious; but the trends in a very large number of localities coincide.

On the whole, one can suggest that the alterations in the dastūrs were made mainly to allow for local price-variations, while single standard yields were assumed for big geographical blocks. This at first sight, would seem to have been

impracticable.[1] But as a matter of fact, even in the estimated yields in the modern official Agricultural Statistics, the variations are not substantial, at least in U.P. For all the districts of U.P. that we have considered the range of such estimates for wheat from irrigated lands in 1892 was 1476-1120 lbs/acre, implying that the variations were confined to a margin of ∓ 13.7% from the mean (1298 lbs.).

For certain dastūr-circles, like Amber, Rohtas and Siyalkot the dastūrs are exceptionally low, while for Jodhpur and Nagaur these are as exceptionally high. The 19th century data for prices and yields fail to justify these abnormalities. It is possible that the low rates were the result of political concessions. This in the case of the Kachhwaha territory (Amber) seems quite probable, the purpose being to rate Kachhwaha parganas at a low jamą in order to entitle them to lay claim to jāgirs elsewhere. On the other hand the high rates for Jodhpur and Nagaur could be attributed either to high prices prevailing there in the 16th century, owing to poor means of transportation or could simply be an attempt to inflate the jamą (for the purpose of awarding higher mansabs to Rajput chiefs than justified by the actual income of their territories).[2]

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1. See for this view, Irfan Habib, Agrarian System, p.201.
2. It is interesting to note that the '19-year' Rates for sūba Ajmer are not given in the Āin. Probably these were disregarded in framing the final dastūrs for Jodhpur and Nagaur at any rate. The Rathor ruler Mota Raja Udai Singh, was restored to his principality in 1583, (Vigat, I, p.76; Vir Vinod, Vol. 2, part II, p.815), Jodhpur being previously

contd.....

There are some sets of variations and correspondences in the _dastūrs_ which suggest that the formulation of _dastūr_ for some circles was independent of yields and price-levels in their particular localities, owing to some administrative bias. There are some small _dastūr_-circles comprising single _parganas_ only, such as Kishni and Ibrahimabad, which though situated inside the _dastūr_-circle of Awadh, had had their separate sets of revenue rates. These rates are quite different from the rates sanctioned for Awadh, but identical for almost all the crops to those sanctioned for Manikpur and Ree Bareilly respectively. It can be a reasonable deduction that these _parganas_ were included in the _jāgīrs_ of some big nobles who held the other circles within their _jāgīr_ and wished to have identical _dastūrs_ in the various parts of their _jāgīrs_. This might also have been the case with the _dastūr_-circle of Kairana which consisted of of only two _parganas_ and had practically the same rates as Panipat. The only difference here is that unlike Kishni and Ibrahimabad, Kairana was contiguous to Panipat. The reason for recording it as a separate _dastūr_-circle could be that while _dastūr_-circle Panipat belonged to _sarkār_ Delhi, the two _parganas_ of Kairana was in _sarkār_ Saharanpur.

(continued)...... under Mughal occupation. Since the final _dastūrs_ for Jodhpur and Nagaur are detailed figures (in _dāms_ and _jītals_), it could be assumed that the inflated _dastūrs_ for Jodhpur were promulgated immediately after 1583; then, after 1586, these were increased according to the schedule, to allow for the larger _bīgha_ (_Ilāhī_) promulgated in that year.

Such considerations of political favours, administrative convenience or regard for single _jāgīr_-jurisdictions might have introduced departures elsewhere too from the standard of yield and prices formally adopted as basis for formulating the _dastūrs_. But the cases where the existence of such extraneous considerations can be inferred are not many; and we can feel confident that normally Akbar's administration went by its own view of the yield and price-levels in different regions and localities.

A detailed study of the evolution of the _dastūrs_ has been attempted partly because rich quantitative material is furnished for this in the _Āīn-i Akbarī_; partly, because the data are of significance for price-movements, to be considered in other parts of this thesis; partly, because the region to which the _dastūrs_ applied was a very large one, including the 'core' portions of the Empire; but, mainly, because it sheds light on the size of the surplus that the Mughal administration expected to gather in the form of land-revenue.

We have seen that the actual rates of _dastūrs_ suggest that the land-revenue assessed on most food and other ordinary crops (including wheat) was equal to about a half of the produce. For the higher-grade crops (sugarcane, indigo, etc.), it is difficult to be sure if all the _dastūrs_ approximated to a half of the produce; they were in any case not fixed in accordance

with estimates of crop-yields, and comparisons of dastūrs with modern data cannot be meaningfully made. They seem to have been so fixed as to allow enough to the cultivator so as to give him an incentive, while also striving to claim for land-revenue a substantially larger amount than could be claimed for other crops. Keeping such variations (which could, on the whole, be of only marginal effect), we may still conclude that the Mughal land-revenue demand accounted, on paper, at least, for about, or nearly half the produce of agriculture.[1]

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1. In Kashmir, Abul Fazl expressly commends his patron for setting the land-revenue at just half the produce (Āīn, I, p.570).

Appendix

Dastūr Indices

Agra = 100

	Wheat	Gram	Barley	Mustard	Peas	Juar	Lab-dhra	Rice	Sugar-cane	Cotton	Indigo
Agra											
1. Haveli Agra	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
2. Etawa	89.98	80.05	81.79	93.33	92.85	80.05	78.54	74.02	90.89	102.75	102.15
3. Haveli Biana	100.00	94.99	90.81	100.00	107.15	89.98	-	96.36	100.73	102.57	101.43
4. Mandawar	100.00	89.98	90.89	100.00	103.58	80.05	85.70	105.57	90.89	102.57	102.86
5. Alwar	100.00	89.98	90.81	100.00	103.58	80.05	85.70	105.50	90.89	102.57	102.86
6. Bachhera	96.66	82.56	86.34	93.33	101.53	80.05	76.12	105.57	84.85	102.57	102.86
7. Mubarakpur	94.51	80.32	84.07	93.33	92.85	80.05	85.70	105.50	85.70	91.28	100.13
8. Irach	94.93	77.55	93.50	96.66	71.39	85.60	85.70	77.80	117.29	105.13	104.14
9. Tijara	96.66	82.56	86.34	93.33	100.00	80.05	85.70	105.57	125.50	102.57	102.86
10. Khora ka Thana	100.00	89.98	90.81	100.00	103.58	80.05	85.70	105.50	90.89	102.57	102.86
11. Besru	100.00	82.56	86.34	93.33	100.00	82.56	85.70	96.36	93.93	108.99	104.29
12. Sahar	100.00	82.56	86.34	93.33	100.00	82.56	85.70	96.36	92.57	108.94	104.14
13. Pahari	96.66	82.56	86.34	93.33	100.00	80.05	85.70	105.57	84.85	102.57	102.86
14. Nonehra	101.49	89.98	90.81	100.00	104.09	80.05	83.14	105.50	84.12	102.57	102.86
15. Kanauj	90.70	84.08	81.30	94.87	92.85	72.90	82.12	77.80	89.38	107.71	104.29
16. Sakit	96.66	87.48	86.34	97.14	101.53	87.48	85.70	81.51	93.93	107.71	102.30
17. Bhogaon	86.70	75.04	77.24	89.99	78.54	80.05	77.27	74.09	98.80	97.43	101.43
18. Sikandarpur	89.98	84.97	81.79	96.66	92.85	87.48	85.70	81.51	100.03	107.71	102.86
19. Phaphund	94.99	77.55	81.79	96.66	71.39	85.60	85.70	77.80	96.96	105.14	102.38
20. Gawalior	103.34	97.23	81.79	100.00	100.00	100.00	100.00	92.45	100.00	100.00	102.30
21. Kalpi	94.99	94.99	81.79	97.14	71.39	85.60	85.70	77.80	96.88	105.14	104.22
22. Koil	89.98	80.05	81.79	86.65	85.70	79.96	78.29	77.80	90.89	102.75	104.22

23. Thana Farida	86.70	77.55	77.24	89.99	92.85	75.04	78.54	77.53	90.89	107.71	102.84
24. Akbarabad	94.99	80.05	86.34	86.65	92.85	79.96	78.54	77.80	90.89	102.75	102.84
25. Marehra	89.98	84.97	81.79	96.66	92.85	88.01	85.70	81.51	93.93	107.71	102.84
26. Narnaul	93.32	82.47	84.07	93.21	89.14	79.96	89.14	100.00	90.89	102.57	105.80
27. Bareda Rana	94.99	80.05	84.07	93.33	92.85	80.05	85.70	105.57	86.34	102.57	99.67
28. Chalkana	91.65	80.05	84.07	93.33	85.70	74.15	85.70	88.93	84.85	102.57	102.86
29. Kanoda	-	-	-	-	-	-	-	-	-	-	-
Delhi											
1. Haveli Qadim	93.92	82.56	86.34	86.41	92.85	75.04	85.70	91.58	86.34	102.57	102.86
2. Panipat	86.70	82.56	81.79	86.65	85.70	75.04	85.70	74.09	83.33	105.14	102.86
3. Meerut	86.70	89.98	77.24	94.76	78.67	75.04	71.39	79.66	83.33	102.57	102.86
4. Baran	86.70	72.54	77.24	104.89	92.85	75.04	78.03	77.53	90.89	107.57	102.86
5. Jhajhar	91.65	75.04	84.07	93.33	85.70	75.04	85.70	88.93	84.85	102.57	102.86
6. Palwal	96.66	75.04	86.34	93.33	101.53	59.93	85.70	97.02	93.79	108.99	102.86
7. Rohtak	86.70	66.28	70.49	90.35	85.70	30.05	92.85	81.51	86.56	103.03	102.53
8. Badaon	75.01	67.53	93.09	78.31	-	84.26	71.39	60.64	84.85	110.28	103.22
9. Haveli Hisar	93.32	65.03	81.79	94.76	93.74	84.97	89.40	85.22	84.85	102.57	105.72
10. Gohana	85.21	66.28	86.34	86.65	93.74	84.97	89.27	-	86.37	102.57	105.72
11. Sirsa	86.70	67.53	86.34	86.65	93.74	84.97	85.70	75.94	86.37	102.57	105.72
12. Maham	86.70	79.96	86.34	89.99	85.70	78.26	92.85	80.84	86.15	102.57	99.67
13. Rewari	94.99	80.05	84.07	93.33	92.85	80.05	92.27	105.57	86.34	102.57	99.75
14. Taran	96.12	69.50	-	93.33	92.85	80.05	69.73	105.57	84.85	102.57	102.86
15. Sahna	51.94	78.26	86.34	-	101.53	82.56	85.70	36.37	93.93	108.99	104.29
16. Kohana	100.00	75.04	90.89	100.00	99.23	80.05	85.70	55.86	90.95	102.57	102.86
17. Deoband	83.36	75.04	72.76	88.92	103.58	60.02	71.39	70.38	83.33	102.57	100.00
18. Sardhana	86.70	77.55	77.24	94.76	96.42	75.04	71.39	80.12	83.33	102.57	102.86
19. Kairana	86.46	78.98	81.79	88.92	85.70	75.04	85.70	74.09	83.33	105.14	102.86
20. Indri	76.68	82.56	75.04	79.98	65.01	75.04	78.54	70.38	80.30	123.07	102.86

21. Haveli Sirhind	76.68	78.26	71.14	79.98	71.39	75.04	80.33	70.38	82.57	123.07	102.86
22. Thanesar	88.25	71.29	64.80	75.45	70.63	77.55	78.54	74.09	81.54	120.78	102.86
23. Tihara	76.68	74.06	79.51	77.47	72.80	75.04	78.54	74.09	80.03	123.02	102.86
24. Samana	76.68	75.04	68.21	79.98	79.02	75.04	78.54	82.17	80.27	120.50	102.86
25. Haveli Sambhal	83.24	75.04	68.21	86.65	96.42	82.47	78.54	70.38	87.86	117.94	104.29
26. Chandpur	81.69	80.05	72.76	83.31	96.42	86.58	78.54	68.52	88.62	111.70	100.00
27. Lakhnaur	75.01	80.05	72.76	78.31	-	82.56	71.39	70.38	81.82	110.73	103.22
Illahabas											
1. Haveli Illahabas	89.98	84.97	81.79	106.67	78.54	77.55	-	40.95	-	102.57	104.29
2. Jalalabas	86.70	87.48	82.28	80.93	92.85	-	-	-	-	-	-
3. Bhadoi	96.66	-	-	-	-	80.05	-	70.38	85.61	105.14	103.58
4. Benaras	96.66	92.23	97.72	119.90	128.48	89.98	-	81.51	83.33	110.28	103.58
5. Haveli Jaunpur	96.66	92.49	136.34	119.90	128.48	89.98	-	81.51	83.33	110.28	103.58
6. Mongera	86.70	87.48	86.34	83.31	92.85	80.05	-	70.38	85.60	105.14	103.58
7. Chunadh	96.66	92.49	95.69	119.90	128.48	89.98	-	81.51	110.68	110.28	103.58
8. Ghazipur	96.66	92.49	97.24	119.90	128.48	89.98	-	81.51	110.43	110.28	103.58
9. Karra	89.62	84.97	-	105.24	78.54	76.39	-	74.09	71.31	102.57	104.27
10. Kora	103.93	77.55	81.46	94.87	71.39	74.42	-	77.80	96.96	105.14	104.29
11. Kotia	89.62	84.97	81.46	105.24	76.63	77.55	-	74.09	70.24	102.06	104.29
12. Jajmau	90.82	82.73	81.46	94.87	64.11	72.54	-	72.83	96.96	106.79	104.29
13. Kalinjar	94.81	77.55	81.46	96.66	65.01	83.36	-	77.80	97.34	105.14	104.29
14. Manikpur	86.70	87.48	86.34	115.73	92.85	78.98	-	70.38	85.53	105.14	103.65
15. Rae Bareilly	93.32	87.48	93.17	115.73	121.33	84.97	-	77.80	83.33	107.71	104.22

Awadh											
1. Haveli Awadh	81.69	77.55	79.51	89.99	92.85	80.05	78.54	72.23	81.03	95.28	104.22
2. Ibrahimabad	93.32	87.48	93.17	113.23	121.33	84.97	82.12	77.80	83.33	107.71	103.58
3. Kishni	86.70	87.48	86.34	83.31	92.85	78.98	78.54	70.38	65.37	105.14	103.58
4. Bahraich	81.69	75.04	77.24	86.65	82.38	84.97	74.97	66.67	83.33	102.57	104.29
5. Firuzabad	83.36	72.54	72.76	86.65	78.54	75.04	78.54	68.52	90.89	102.57	104.29
6. Kharonsa	83.18	75.04	77.24	86.65	82.12	84.97	74.97	66.67	83.33	102.57	103.65
7. Haveli Khairabad	-	-	-	-	-	75.04	78.54	68.52	90.89	102.57	-
8. Pali	-	-	-	-	-	72.54	82.12	77.80	89.38	107.71	-
9. Bhurwara	-	-	-	-	-	80.05	78.80	72.37	81.03	96.15	-
10. Gorakhpur	-	-	-	-	-	84.97	74.97	66.67	83.33	102.57	-
11. Lucknow	-	-	-	-	-	78.26	80.33	74.09	86.45	107.43	-
12. Unam	-	-	-	-	-	72.54	82.12	77.80	89.38	107.71	-
Lahore											
1. Lahore	81.99	80.05	93.50	93.33	-	89.98	99.87	81.51	98.48	92.59	100.26
2. Parasroor	80.02	80.05	77.24	93.33	-	84.97	96.42	66.67	98.24	100.00	100.00
3. Patti Haibatpur	80.02	75.04	77.24	93.33	-	84.97	92.85	77.14	90.89	100.00	100.00
4. Jalendhar	80.02	-	-	-	-	80.05	85.70	70.38	83.33	102.75	100.00
5. Rohtas	66.67	70.04	63.66	79.98	-	70.04	78.54	55.60	83.33	87.39	85.74
6. Siyalkot	50.21	80.05	77.24	93.33	-	84.97	73.69	68.52	-	88.53	86.07
7. Hazara	83.36	77.55	77.24	106.79	-	84.97	100.00	81.51	100.00	105.14	101.43
8. Battala	73.34	75.04	72.76	86.65	-	80.14	95.15	81.51	92.41	97.48	100.00

Ajmer											
1. Haveli Ajmer	73.35	75.04	68.21	133.25	84.16	55.01	64.24	74.22	75.75	69.49	85.71
2. Amber	46.69	44.72	40.89	79.98	64.24	34.97	39.34	30.10	58.29	46.15	54.59
3. Jodhpur	150.03	125.04	136.34	166.63	-	70.04	57.09	74.22	75.42	76.93	85.71
4. Chittor	83.36	70.04	68.21	79.97	71.39	65.04	71.39	68.93	75.42	87.20	71.43
5. Ranthambor	83.36	70.04	68.21	79.97	71.39	65.92	71.39	83.96	75.42	87.20	71.43
6. Chatsu	80.08	84.97	77.24	73.30	-	82.47	82.12	111.13	80.89	89.72	85.71
7. Delhwara	100.00	94.99	100.00	83.31	-	94.99	100.00	77.80	75.75	94.86	85.71
8. Todah	70.01	62.52	65.93	54.95	-	67.17	60.66	51.89	55.31	61.93	57.14
9. Nagaur	150.03	125.04	136.34	166.63	-	70.04	57.09	74.09	75.75	76.83	85.71
Multan											
1. Multan	79.84	-	100.00	133.25	-	94.99	142.70	81.51	90.89	107.71	92.87
2. Dipalpur	66.67	-	61-38	86.65	-	80.05	92.85	82.17	85.61	100.00	101.43
3. Sadghara	82.65	-	72.76	92.61	-	84.97	99.23	81.51	96.96	102.57	102.15
Malwa											
1. Ujjain	-	-	-	-	-	-	-	-	-	-	-
2. Raisen	104.05	94.99	95.45	-	100.00	100.00	-	-	100.00	100.00	-
3. Mando	-	-	-	-	-	-	-	-	-	-	-

Chapter V

LAND-REVENUE REALIZATION

I

The dastūrs, with which we had been concerned in the preceding chapter, represented the tax-claim laid on the peasant; the jamaʿ or naqdī of the Āʾīn-i Akbarī, which will be treated in this chapter, represented net revenue-realization. In the Mughal administration, the system of assignment of jāgīrs required that the jamaʿ (or, as it was later styled, the jamadāmī) of the territory be exactly equal to the talab or pay due to the assignee.[1] Abūl Fazl's own words imply that the jamaʿ equalled pay.[2] The jamaʿ in this context could not, therefore, be an estimate of the total amount of assessed taxation, but the expected net income (i.e. gross realization less expenses on collection, including allowances from collection drawn by others) which, in the view of the administration, the jāgīrdār could collect from the peasants or the primary assessees.[3]

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1. Cf. Irfan Habib, Agrarian System, p.261.
2. Āʾīn, I, p.347.
3. The definition of jamaʿ (=jamadāmī) is at variance with that of Irfan Habib and earlier historians who appear to have assumed that it was an estimate of gross realization.

We have seen in chapter IV that in the zabti provinces, at least, the peasant had to part with about a half of his produce to satisfy the land-revenue demand. In these provinces, the cash revenue-rates (dastūrs), multiplied by cultivated area, should have equalled the gross-realization, if we assume that the collection fully equalled assessment. The proportion that the net realization bears to the gross collection can then be determined by finding out the difference between the dastūrs multiplied by the gross cropped area (worked out from the ārāzī figures) and the jama' (or naqdī) set out in detail in the Āīn's 'Account of the 12 Sūbas'.

To clear a minor point, Abūl Fazl, while giving the sūba totals, uses the word jama', but in the table where he sets out the pargana-wise break-up, he puts the pargana figures under the column-heading, naqdī. It therefore appears that despite its other connotations, the word naqdī is here synonymous with jama'.

Since the jama' was the estimate of net income from all sources of revenue which the assignee, or in the unassigned areas, the King's Establishment (Khālisa) expected to receive, it must have also included taxes other than land-revenue. In the absence of any express statement in the Āīn, one infers this from the Āīn's statistics: While setting out

the pargana-wise figures in 'the Account of Twelve Sūbas', Abūl Fazl records the jamaʿ against mahals comprising cities only: In certain cases, the Mahals of balda (city) and havelī are separately mentioned, no ārāzī being recorded against the balda. In the latter mahal, therefore, the jamaʿ could only be made up of the expected revenue from taxes other than land-revenue. For example, for the city of Ahmadabad a substantially large amount is entered as jamaʿ, while no ārāzī is recorded. Evidence more direct than this is forthcoming from the sūbas of Bengal and Gujarat. Here the jamaʿ/naqdī figures against certain mahals are expressly stated to be composed of income from taxes other than land-revenue. Some of these entries are:

Specification of jamaʿ[1]	Pargana	Sarkār	Sūba
Sāir zakat	Narainpur	Sonargaon	Bengal
" "	Gora	Ghoraghat	"
Sāir	Harnagar	Silkat	"
"	Sakhu	Sonargaon	"
hāsil zakat	Dilwarpur	"	"
Sāir Jalkar	Sali Sari	"	"
"		Bazuha	"
hāsil-i Kanka	Chaukhandi	Sonargaon	"
zakat		Purnea	"
Sāir az Namaksār		Chatgaon	"
Mahsūl Sāirjihāt	Mahsūl Sāirjihāt	Surat	Gujarat

1. Zakat meant not the canonical duty of charitable gifts laid on Muslims, but a road-toll; sāir and sāir-jihāt signified market and transit dues; jalkar, tax on water-produce; namaksār, tax on salt-pans. I cannot identify Kanka.

The inclusion of taxes other than land-revenue in the jama' is thus quite well established. There is, however, no easy way of determining the proportion within the jama' of the total amount derived from such taxes; yet there are some rough indicators. Assuming that the taxes collected in the large towns accounted for the bulk of taxes other than land-revenue, we can consider the jama' figures recorded for certain towns. Out of the total jama' of 18,75,55,826 dāms for the sarkār of Agra, the jama' of the town of Agra with havelī (rural district) was 4,49,56,450 dāms. This gives the pargana of Agra a share in the jama' of the sarkār amounting to 23.969%. The pargana of Agra contained a large rural district, and its measured area amounting to 9.76% of the total measured area of the sarkār. We can, therefore, argue that since the rural area of havelī pargana Agra should have contributed its share of land-revenue in proportion to its area, that is nearly 10% of the total jama' of the sarkār, the share of its urban district alone, in the total revenue of the sarkār should have been about 14%. For some other parganas in sūba Gujarat containing sizeable cities, we have the following figures.

Pargana	Sarkār	A Jama' of pargana as % of jama' of Sarkār	B Ārāzī of pargana as % of ārāzī of Sarkār	Inferred Income from Taxes other than land-revenue as % of total (A minus B)
Baroda	Baroda	65.61	54.32	11.29
Surat	Surat	29.07	3.87	25.20
Ahmadabad City & the Port of Ghogha	Ahmadabad	7.57	-	7.57
Patan	Patan	1.64	-	1.64

Though the share of urban taxes seems to vary a great deal, the figure for Agra can perhaps be taken as the maximum limit for urban taxation in any large territory of the Mughal Empire. Agra was probably the biggest city in the Empire, being not only its capital, but also its largest commercial centre. There was hardly any other large town in the Agra sarkār with the possible exception of Mathura and Bayana. The total share of urban taxation in total taxation-revenue of sarkār Agra could not therefore have been substantially above 14%. In Gujarat the portion of urban taxes in Surat appears to be extraordinarily high; but Surat was a big port, while the agricultural zone in the sarkār contained large forested and hilly areas.

As a sample, rather more accurately representing the average in geographical terms, we can take later taxation statistics from Eastern Rajasthan, which have the further merit of directly distinguishing between land-revenue (māl-o-jihāt) and other taxes, that together formed the muāfiq jamaʿ-bandī (revenue realized according to assessment). Taking the statistics for four parganas, c.1690, we get the following figures.[1]

1. I am indebted to my colleague Dr S.P. Gupta for guidance on this evidence.

Pargana	Year	A Māl-o-jihāt	B M. Jamaʿbandī	A as % of B
Bahatri	1691	17,659	19,076	92.572
Malarna	1690	11,550	12,331	93.666
Lalsot	1687	35,035	37,433	93.035
Amber	1690	88,725	103,073	82.864

These figures inspire respect, since pargana Amber, which contained the capital town of the Kachhwahas, gives the lowest per centage of land-revenue. There being other adjacent parganas whose revenue figures for corresponding years are not available, a general average for the Amber territory cannot be attempted. But we may reasonably assume that the share of taxes other than land-revenue did not normally exceed 10 per cent.

Let us, therefore, take it that the land-revenue accounted for at least 90% of the total jamaʿ. Given this assumption, the jamaʿ should ordinarily be reduced by 10%, if we wish to estimate the net realization from land-revenue only.

In his jamaʿ/naqdī, Abul Fazl also includes revenue-income alienated under suyūrghāl,[1] the amount of which

1. See Chapter VI.

is specified by him separately as well. But since the income alienated under suyūrghāl too was a part of net realization by revenue receivers, and because the ārāzī figures presumably include areas granted in suyūrghāl, the Āīn's jamaʿ figures should not be reduced (so as to exclude suyūrghāl) for purposes of any calculation of land revenue realization per unit of area.

From the estimated figure of net land revenue realization we might determine the gross land-revenue collection if one could establish the sanctioned or allowed payments, commissions, remissions and exemptions.

One important claim on land-revenue was that of the zamīndārs and local and village officials. In the 17th century the zamīndār's share in Northern India was nominally set at 10%.[1] It seems at first sight from a tradition preserved in the Mirʾāt-i Ahmadī, that the zamīndārs' share in Gujarat amounted to a quarter of the total revenue since the time of the Sultans, this right being duly confirmed by Akbar.[2] But it is not clear if the zamīndārs obtained a quarter of revenue of the entire territory, or only of their own ancestral

1. Irfan Habib, Agrarian System, p.146.

2. Mirʾāt-i Ahmadī, pp.173-4; Irfan Habib, Agrarian System, p.142.

land within it, there possibly being a large peasant-held (raiyati) zone in Gujarat. Should the latter have been very large, the zamindars' actual share might well have been substantially less than 25% of the entire land revenue.

The evidence for the shares of local officials' is to be found in the Āin itself, supplemented by 16th and 17th century documents. Their total share would seem to have amounted to 7%, the break-up being as follows:[1]

Muqaddam	2.5%
Chaudhuri	2.5%
Qānūngo	1.0%
Patwārī	1.0%

While it is difficult to find how much the jagirdar was expected to spend on revenue collection, we are told that in the khālisa the amount allowed to the karori (revenue-collector) for the cost of collection (haqqu-t tahsīl) was 20% of the total collection in Akbar's time.[2] This proportion

1. Āin, I, pp.288, 300; see also Irfan Habib, Agrarian System, pp.131 & n, 135 & n, 291 & n, 294 & n.
2. Khulāsatu-s Siyāq, Br. Mus., Add 6588 collated with Or 2026, f.79a-b. Irfan Habib suggests that 20 (bist) is an error for 8 (hasht) (Agrarian System, p.279). But it is not possible to accept this suggestion since the same source goes on to say that the amount was first reduced to 10% in the reign of Shahjahan, upon the transfer of the work of assessment from the work of karori to amin, and then further to 5% upon the loss of faujdari (military) jurisdiction by the karori.

was allowed to the *karori* while he was responsible for assessment as well as collection. It seems a fair assumption, therefore, that the *jāgīrdār* too must have spent about as much of the total towards the cost of collection. Adding all these different charges together, that is taking 10% for the *zamīndārs'* share, 7% for that of local officials and 20% for the permitted costs of collection, we should allow for 37% as the normal cost of collection of land-revenue in northern India in Akbar's later years.

If one now wishes to get an estimate of the total gross land-revenue collection from the land-revenue realization (=90% of the *jamaʿ* in the *Āʾīn*), the latter figure should be so raised that the addition could be 37% of the sum obtained.

One could work out the result from the following simple equation: If J' is the gross land-revenue realization and J the *Āʾīn*'s *jamaʿ*:

$$J' = \frac{90}{100} J + \frac{10}{100} J' + \frac{7}{100} J' + \frac{20}{100} J'$$

$$\text{or} \quad J' = \frac{90}{100} J + \frac{37}{100} J'$$

$$\text{or} \quad \left(1 - \frac{37}{100}\right) J' = \frac{90}{100} J$$

$$\text{or} \quad J' = \frac{90}{63} J$$

$$\text{or} \quad J' = 1.43 J$$

In other words, the gross-revenue realization in the *zabti* provinces should have been 143% of the *jama'* set out in the *Āin*. We must, of course, remember that in assuming this percentage as almost universal, we are ignoring immense local variations; and the margin of deviation from the actual in particular localities could be very great.

If we now divide J' by A' (the gross cropped area, for which see Chapter II) we should get the gross land-revenue realized per *bigha*. Before making our detailed calculations on this basis, it is worth noting that Abul Fazl provides us with a minimum standard J' per *bigha*. For he expressly gives us an estimate of *hāsil* (or realization) from a *bigha* of land as 40 *dāms*. He regards this as the minimum, saying that the actual realization varied with each locality (*qasba*, i.e. *pargana*).[1] This statement occurs in his chapter on *suyūrghāl* grants; and the context shows that he had in mind the income that a grantee was likely to derive from a *bigha* of cultivated land. The income of the grantee consisted of the land-revenue and other fiscal claims due to the King. But the grantee was further exempted from all perquisites of

1. *Āin*, I, p.199. *Qasba* was used both as a synonym for *pargana* and as meaning a township.

officials, expressly including the '5%' cess of the muqaddam (and chaudhuri) and the '2%'-allowance of the qānūngo (and patwāri).[1] It seems, however, that he had to pay the zamindārs' share (haqq-i milkiyat).[2] In other words the gross income of the grantee was likely to consist of our J', less 10%. Given 40 dāms as the grantee's income, one would expect J' per bigha to have been 44.44 dāms.[3]

To pass on, now, to the business of calculating the actual J'/A' of the various localities. While, as we have seen, the jamā/naqdī in the Āīn, when scaled-up by 43%, gives us an estimate of gross land-revenue realization, the gross cropped area (A') can be worked out by reducing the ārāzī first by 10% to exclude the uncultivable waste and then, by the ratio of cultivable waste to cultivable land (i.e. gross cultivation plus cultivable waste) in the corresponding area in 1909-10.[4] The gross cropped area can thus be determined for the regions for which Modern land-use statistics are

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1. Irfan Habib, Agrarian System, p.131 n.

2. Ibid., pp.300-301.

3. This suggests a refinement of our calculations of J'. To get J' one should not just multiply J by 143/100, but take (with S = Suyūrghāl), $J' = (J - S) \times \frac{143}{100} + S \times \frac{111}{100}$. However, the difference would be trifling, and it can be argued that S is really J alienated (see Chapter VI) and thus not $J' - \frac{10}{100} J'$ at all.

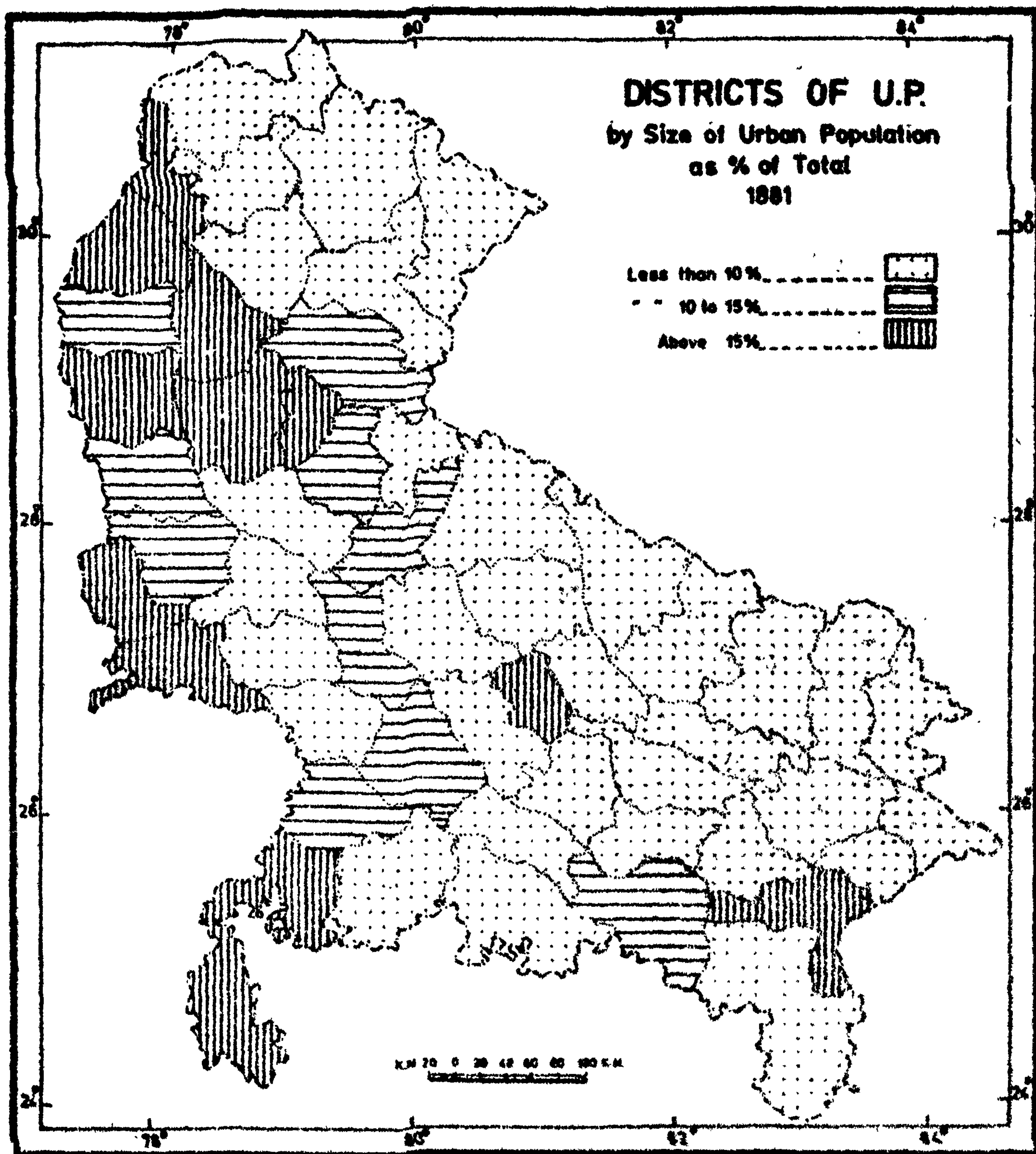
4. See Chapter II.

available, and where the identifications of the _Āin_'s _parganas_ are firm and complete.

We can accordingly work out the J'/A' for those regions of the Mughal Empire, that comprise the modern states of U.P., Haryana and the Panjab - that is the entire _ẓabt_ region except the Malwa and Ajmer provinces.

Since measurement might not have covered the entire assessed land, J'/A' (gross-revenue collection divided by gross cultivation, 1595) should give us the maximum limit for revenue incidence in terms of _dāms_ per _bigha_. On the other hand, dividing J' by the modern (1909-10) gross cultivation (C) will give us the minimum limit, since it can be assumed that gross cultivation in 1909-10 must have been in considerable excess generally of the actual gross cultivation in 1595.

Table I sets out J', A' and C and the ratios J'/A' and J'/C for each _dastūr_-circle situated within U.P. Since within each _dastūr_-circle the cash-rate on each crop was the same in all _parganas_, it would be possible to compute, as we shall see, the average cash revenue-rate for each circle (by applying weights based on the distribution of crops cultivated in these localities during the 19th century). Moreover, the _dastūr_-circle happens to be the smallest unit


DISTRICTS OF U.P.
by Size of Urban Population
as % of Total
1881
Less than 10%
" " 10 to 15%
Above 15%
78°
80°
82°
84°
30°
28°
26°
24°

Ch VI

Map IV

for which J'/C can be calculated, since for the present the map-area can be measured only for the dastūr-circles, for only their limits are shown in Irfan Habib's maps. Pargana boundaries are in any case, very uncertain, since there is no indication of their limits in the Āīn beyond the name of the pargana-headquarters. On the other hand, with the dastūr-circles, each embracing a number of known places, the margin of error in measuring the area is greatly reduced.

Table I (next page)

Those dastūr-circles, where J'/C is very close to J'/A', or where, in other words, the difference between the upper and lower limits of gross land-revenue incidence is very small, present us with a correspondingly narrow margin within which the average land-revenue collected per unit of assessed area may be placed. In the dastūr-circle of Agra, the difference between the two limits is less than one dām per bīgha, and J'/C is the highest here among all the dastūr-circles of U.P. The gross cultivation (A') in the territory of the Agra circle in 1595 was 98% of what it was in 1909-10. This means that A' here included almost the entire assessed area, and

Table I

Dastūr-circle	J' (dāms)	A' (bīgha-i Ilāhī)	C bīgha-i Ilāhī)	J'/A'	J'/C
1. Deoband	8,71,74,382	20,34,333	22,29,465	42.85	39.10
2. Sardhana	2,06,71,085	4,01,913	6,12,370	51.43	33.76
3. Chandpur	3,60,85,738	4,54,665	10,87,223	79.37	33.19
4. Sambhal	4,63,61,930	19,74,562	26,03,658	23.48	17.81
5. Lakhnaur	87,00,560	5,26,579	11,72,209	16.52	7.42
6. Kairana	76,36,719	1,36,800	1,40,976	55.82	54.17
7. Delhi (East of Jamuna)	6,91,80,480	14,80,307	24,50,073	46.73	28.24
8. Meerut	2,60,40,839	11,96,158	13,10,590	20.14	19.87
9. Baran	1,55,87,726	5,92,411	8,67,669	26.31	17.97
10. Badaun	4,97,87,399	13,62,064	50,05,895	36.55	9.95
11. Bahrwara	6,91,336	5,973	4,06,174	115.74	1.70
12. Pali	3,13,24,494	5,21,514	14,92,018	60.06	20.99
13. Thana Farida	2,71,40,755	5,71,831	13,20,210	47.46	20.56
14. Akbarabad	1,20,94,751	3,55,714	4,49,354	34.00	26.92
15. Kol	2,59,61,501	6,73,556	8,08,113	38.54	32.13
16. Marahra	1,18,69,924	3,14,067	2,42,588	37.79	48.93
17. Sikandarpur Atreji	3,85,559	2,42,280	70,223	1.59	5.49
18. Agra	10,76,60,225	21,25,267	21,62,269	50.66	49.79
19. Etawa	3,10,34,066	13,15,155	10,88,003	23.59	28.56
20. Phaphund	77,68,319	69,147	2,69,460	112.34	28.83
21. Kalpi	7,07,36,304	10,20,227	17,16,375	69.33	41.21
22. Sakit	1,21,65,207	3,32,824	5,69,992	36.55	21.34
23. Bhogaon	3,19,02,733	11,35,451	16,68,350	28.10	19.12
24. Kanauj	2,21,63,330	3,59,466	12,75,323	61.66	17.38
25. Khairabad	3,04,03,327	8,34,522	20,48,825	36.43	14.84
26. Unam	2,46,89,865	5,41,901	8,67,395	45.56	28.46
27. Lucknow	9,07,78,659	19,50,369	37,33,943	46.54	24.31
28. Ibrahimabad	6,36,948	14,040	78,000	45.37	8.17

	Dastūr-circle	J'	A'	C	J'/A'	J'/C
29.	Awadh	4,27,86,378	20,40,478	25,20,718	20.97	16.97
30.	Kishni	19,15,179	20,083	24,053	95.36	79.62
31.	Bahraich	2,96,10,143	11,60,319	26,08,842	25.52	11.34
32.	Firuzabad	30,01,684	1,07,400	2,81,413	27.95	10.67
33.	Gorakhpur	1,70,55,310	1,84,309	90,97,370	92.54	1.87
34.	Khuransa	18,80,523	20,817	5,15,671	90.34	3.65
35.	Jaunpur	7,87,34,154	6,18,520	53,33,617	127.29	14.76
36.	Benaras	1,26,70,684	1,57,273	5,39,938	80.56	23.47
37.	Chunar	83,09,664	78,456	14,15,454	105.91	5.87
38.	Ghazipur	1,96,33,359	2,13,114	6,99,881	92.13	28.05
39.	Jajmau	71,93,288	70,856	2,47,158	101.52	29.10
40.	Karra	2,99,07,117	3,43,401	11,19,832	87.09	26.71
41.	Kurtia	27,56,813	26,748	1,92,307	103.07	14.34
42.	Kora	1,49,26,991	2,31,626	5,92,832	64.44	25.18
43.	Rai Bareily	1,29,91,606	1,13,469	5,63,956	114.49	23.04
44.	Manikpur	3,47,94,028	3,35,091	14,22,047	103.83	24.47
45.	Ghiswa	14,92,451	14,189	31,532	105.18	47.33
46.	Bhadoi	2,07,92,093	1,75,859	7,45,529	118.23	27.89
47.	Allahabad	1,02,30,869	-	-	-	-

Note: *Dastūr*-circles No.1 - 10 belong to *sūba* Delhi,
11, 12 and 25 - 34 to Awadh
13 - 24 to Agra, and
35 - 47 to *sūba* Allahabad.

there is little possibility of the actual incidence having been less, on account of the exclusion of any unsurveyed revenue-paying land from the Āīn's figure of the ārāzī. It is possible that Agra being the capital and the biggest city of the Empire, the surrounding districts should have experienced high prices and maintained a large cultivation of market-crops, which generally yielded high revenue. But this very fact also suggests that no other dastūr-circle could have had such a high incidence of revenue upon assessed land as the circle of Agra. In turn, we are led to a further inference: In the dastūr-circles where J'/A' is higher than in Agra, i.e. where it exceeds 50 dāms per bigha, the high rate must be due to incompleteness of measurement, A' there representing only a fraction of actual gross cultivation of 1595. So far as we can see from our own calculations of A' and C, this is, indeed, invariably the case (See Table I).

The land-revenue incidence in the Agra dastūr-circle, cannot serve as an index of the average revenue burden per bigha; since it really sets, as we have seen, the maximum limit. Now among the dastūr-circles in U.P., J'/A' has a wide range of variations, the lowest being barely, 2 dāms (Sikandarpur Atreji) and the highest 127 dāms (Jaunpur). Even if we omit those which exceed 50 dāms as non-actuals,

the variations would still be too wide to lead us to a convincing average. One alternative then is to work out a modal index.

For this purpose we have arranged the dastūr-circles according to their J'/A' into classes with a class length of 10. The result is presented in Table II.

Table II

J'/A'	Number of dastūr-circles
0 - 10	1
10 - 20	1
20 - 30	8
30 - 40	6
40 - 50	6
50 - 60	3
60 - 70	4
70 - 80	1
80 - 90	2
90 - 100	4
100 - 110	5
110 - 120	4
120 - 130	1

If mode is any index of the incidence, then it would seem that the revenue burden mainly ranged between 20 and 50, since the three classes have the highest number of dastūr-circles (20 in all out of 46). Taking the mean between the extremes of the three classes, one gets 35.

Arranging J'/C similarly (Table III) we get the following:

Table III

J'/C	number of dastūr-circles
0 - 10	8
10 - 20	11
20 - 30	17
30 - 40	4
40 - 50	4
50 - 60	1
60 - 70	0
70 - 80	1

The class with the highest number of circles is 20 - 30 (with 17 out of 46 dastūr-circles), followed by class 10 - 20 (11 dastūr-circles). Since J'/C represents the floor for revenue incidence, one should infer that the average

revenue-incidence was not likely to be lower than 30 dāms per bīgha-i Ilāhī. This gives support to the figure of 35 dāms for the actual average incidence of gross land-revenue collection per bīgha of assessed land, deduced from Table II.

If we take the figures for J' and A' for all those circles where J'/A' is below the J'/A' for Agra,[1] the $\frac{J'}{A'}$ comes to 35.80 dāms per bīgha; a figure that further strengthens our estimate of 35 dāms/bīgha for the average incidence of estimated gross collection in the U.P. region c.1595.

It needs emphasis, however, that the above estimate is that of average revenue burden and does not exclude the possibility that it could have varied substantially in individual localities within U.P. We have seen that the dastūr-circle of Agra had a higher revenue incidence (of around 50 dāms/bīgha), while there are four dastūr-circles with J'/A' lower than 25 dāms/bīgha. However, since A' is not likely to have covered the entire cropped area in many localities, it is improbable that the actual incidence in any of the dastūr-circles exceeded its J'/A'. J'/C, as we have suggested must generally give us the floor for the actual revenue incidence.

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1. Only circles where J'/A' is of this magnitude should be taken for the reason (discussed) earlier in this chapter, that wherever J'/A' is higher than that for Agra, A' cannot be taken to represent the total gross cultivated area.

II

Having presented the data of the incidence of the land-revenue upon assessed land, we may now go on to estimate the incidence of land-revenue on the basis of the final dastūr-rates that are so elaborately set out in the Āin.

Since the dasturs represented different rates for different crops, they cannot be converted into an average rate per bīgha of cultivation without some system of weighting. Since we do not know how much area was under which crop in 1595, we can only draw upon information derived from modern statistics. Although crop distribution must have altered considerably in the intervening period, the use of modern information for the purpose of giving weights to the dastūrs of individual crops might not lead to a result very different from what we would have got had we possessed the necessary information directly for 1595. This assumption is further strengthened by the evidence for the Aligarh District. We have statistics for crop-distribution for two years, namely 1872-73 and 1909-10.[1] The cropping pattern in 1872-3, when the impact of the railways was still only partly felt is naturally different ε from that of 1909-10. Even so, if

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1. Smith's Final Settlement Report, pp.44-5; Nevill, Vol. VI, App. VI.

apply to the dastūrs the two different systems of weighting based on crop-distribution in 1872-73 and in 1909-10, the result is little affected. Weight based on 1872-73 gives us 50.69 dāms; that on 1909-10 gives 49.73 dāms.

Using modern crop-area statistics for assigning weights, we offer in Table IV the estimated average dastūr per bigha of cultivation (RR) for certain dastūr circles, together with J', A', J'/A' and J'/C for the same circles. The weights have been assigned on the basis of crop-statistics given for each tahsil in Nevill's U.P. District Gazetteers, for the first decade of this century. The crops whose dastūrs have been used to calculate the average weighted rates nowhere occupied less than 80% of the sown area according to Nevill's statistical tables.

Table IV

Dastūr-circle	J' (dāms)	A' (Bīgha-i Ilahī)	J'/A'	J'/C	R R	J'/A' as % of R R
Delhi (East of Jamuna)	2,39,54,811	5,98,973	39.99	23.93	59.08	67.69
Meerut	2,60,40,839	11,96,158	20.14	19.87	44.40	45.36
Baran	1,55,87,726	5,92,411	26.31	17.97	51.50	51.09
Kol	2,59,61,501	6,73,556	38.54	32.13	49.70	77.55
Agra	10,76,60,225	21,25,267	50.66	49.79	52.00	97.42
Deoband	8,71,74,382	20,34,333	42.85	39.10	53.26	83.26
Awadh	4,27,86,378	20,40,478	20.97	16.97	45.10	46.49
Bahraich	2,96,10,143	11,60,319	25.52	11.34	43.20	59.07
Ghazipur	1,96,33,359	2,13,114	92.13	28.05	55.00	
Unam (Unao)	2,46,89,865	5,41,901	45.56	28.46	47.60	95.71

Multiplying the average dastūr-rate (RR) by gross cultivated area (A'), worked out from the ārazī figures, we get the dastūr-based total assessed revenue, which, if the dastūrs were faithfully enforced, the peasants must have paid to satisfy the land-revenue demand. As against this, J'/A' should represent the actual estimated gross revenue realization. A comparison of RR and J'/A' should therefore show us of the gap that might have existed between the land-revenue claimed and actually obtained from the peasant.

In all the dastūr-circles that are covered in the table above, J/A is invariably lower than RR except for Ghazipur; and in Ghazipur A' happens to be only a fraction of gross-cultivation and so the exception it offers is of no importance. In two out of the ten dastūr-circles the revenue-incidence is even less than half of the dastūr-incidence and in most of others the difference between the two is substantial. Only in the dastūr-circle of Agra, does the difference amount to so little as 2.58%. Otherwise J'/A' as a percentage of RR ranges from 45.36 to 97.42. Nowhere is RR less than 40 dāms/bīgha.

The average J'/A' in all the ten dastūr-circles barring Ghazipur comes to 34.98 dāms/bīgha - a figure that once again reinforces our estimate of 35 dāms per bīgha for average revenue-incidence. The average dastūr-rate for these

circles is 49.19 dāms/bīgha. This average has been calculated by multiplying A' by RR for each dastūr-circle and then dividing the A'xRR by A'; it is therefore not a simple but a weighted average. We may then consider 50 dāms per bīgha to be a fair approximation to the average dastūr-rate for the entire plains region of Uttar Pradesh.

If we are right in holding that the average dastūr-rate was about 50 dāms/bīgha, in U.P., while, as we have suggested earlier, the incidence of gross collection was, on the average, about 35 dāms, it follows that here the actual revenue incidence was only 70% of the incidence implied by the dastūr-rates.

One should remember that we have calculated J' by increasing the jama' (naqdī), so as to accommodate other claims on land-revenue, such as those of the zamīndārs, local officials and headmen and the cost of collection. It is, therefore, all the more striking that the gulf between the land-revenue claimed (RR) and actual revenue realization (J'/A') should be so large in U.P. which comprised two entire sūbas (Awadh and Allahabad) and large portions of the sūbas of Agra and Delhi. We may now try to see whether this was the situation in other regions as well.

III

Turning to Haryana and the Punjab, we can follow the same assumptions about the ratio between *jama'* and gross realization and between *arazi* and gross-collection as we have done for U.P. I have, accordingly scaled up the *jama'* by 43% to obtain gross land-revenue collection (J') and the *arazi* figures have been converted into those of gross-cultivation (A'), by reducing first by 10% to allow for uncultivable waste and further by the per-centage of cultivable waste to total cultivable area at the beginning of the present century, to allow for cultivable waste.

To calculate the average *dastur*-rates (RR), weights have been assigned on the basis of early 19th century crop area statistics, given tehsil-wise in the *Panjab District Gazetteers*,[1] the tehsils being grouped to correspond as nearly as possible with *dastur*-circles.

It seems that the *dastur*-circles situated in this region can be grouped into four distinct blocks, on the basis of contiguity and statistical similarities.

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1. *Panjab District Gazetteer*, Lahore, 1913, Parts B of Volume XII to XXVII.

Table V

	J'/A'	J'/C	R.R.	A' % A	A' % C	J'/C as % R.R.	J'/A' as % R R
South Haryana							
Jhajhar	37.03	12.87	36.93	34.24	34.76		
Hissar	15.08	11.00	43.08	56.47	72.97		
Sirsa	35.64	23.45	36.57	50.16	65.81		
Samana	22.51	8.93	30.82	31.58	39.67		
Gohana	77.66	22.87	45.56	8.45	29.46		
Average	23.23	10.96	36.45				63.73
Delhi-Sirhind							
Delhi (West of Jamuna)	67.79	53.38	43.65	41.52	78.74	122.29	155.23
Panipat	55.81	37.71	50.33	41.01	67.55		
Thanesar	77.86	58.72	46.88	49.24	75.42		
Sirhind	38.71	37.53	46.63	85.11	96.95		
Average (of Totals)	51.00	43.54	46.79		85.39	93.05	108.98
Lahore-Jalandhar							
Jalandhar	54.52	41.10	46.79	58.55	75.38		
Haibatpur	33.66	35.91	44.09	78.59	106.69		
Lahore	73.49	17.88	53.72	1.62	17.23		
Batala	63.38	62.46	52.20	81.79	98.53		
Parasrur	88.98	54.63	55.00	46.84	61.39		
Sialkot	77.63	51.96	45.81	57.52	67.34		
Average	57.96 55.21*	45.61 46.66*	48.08*			97.04	114.83
Hazara	129.77	18.52	48.46	5.53	14.27		
Rohtas	72.63	26.96	46.91	14.58	37.11		

* Excepting Lahore.

The South Haryana block displays features similar to those of the U.P. dastūr-circles. Though the J'/A' here varies from 15.08 to 77.66, the average for the block comes to 23.23 dāms/bīgha. One new feature is that unlike the dastūr-circles in U.P., the average dastūr-rate in the South Haryana block is below 40 dāms/bīgha. Moreover in Jhajhar and Sirsa, the dastūr-rate is almost equal to or even slightly lower than J'/A'. But the average J'/A' for the whole block is less than two-thirds of the average R.R. i.e. the difference between the revenue-claimed and gross-collection is a little larger than in U.P.

In the Delhi-Sirhind block we come across a totally different picture. Here though the RR is never less than 40 dāms/bīgha, the J'/A' in 3 out of 4 dastūr-circle is substantially higher than RR. Since A' is about 3/4ths of the gross cultivation, c.1910-11, the high value of J'/A' cannot be attributed to incomplete measurement. In two cases even the J'/C, which sets the lower limit of land-revenue incidence, is higher than RR. For the entire block J'/A' is 9% in excess of the average RR and J'/C is 93.05% of RR, a situation totally different from U.P. where even J'/A', the maximum limit was only 70% of the average dastūr-rate (RR). This difference in pattern is well illustrated by the figures for the portion of the dastūr-circle of Delhi lying on either side of the river

Yamuna. The revenue incidence on the eastern (U.P.) side works out at 2/3rds of the *dastūr*-rate. But in the western (Haryana) portion, the actual revenue incidence(J'/A') is 55% higher than the average *dastūr*-rate; here even J'/C is 22% above RR. This is chiefly because J'/A' in the western portion is nearly 170% of the J'/A' in the eastern portion of the *dastūr*-circle.

The Lahore-Jalandhar block similarly gives a high revenue-incidence while the average *dastūr*-rate is of the same magnitude as in U.P. Here, barring Haibatpur, J'/A' for all the circles is higher than RR, and the average J'/C is almost equal to the average *dastūr*-rate.

It is thus evident that from Delhi north-westwards to beyond Lahore, the incidence of land-revenue collection was higher than in U.P. Not only is J'/A' higher here than in U.P., but even J'/C is appreciably higher than the J'/C in *dastūr*-circles within U.P. In the two blocks (Delhi-Sirhind and Lahore-Jalandhar) realization seems, indeed, to exceed the revenue-claimed under the *dastūrs*.

An interesting feature - possibly of some significance - is that the *dastūr*-circles where J'/A' is the highest are ranged along the route from Delhi to Lahore.

In the dastūr-circles of Hazara and Rohtas, measurement was probably incomplete, because while J'/A' is as high as 129.77 dāms/bigha, A' amounts to only 14% of the gross cultivation in 1910-11 and 5.5% of the map-area. Little definite can be said about these two dastūr-circles.

IV

As seen in Chapter II another region for which J'/A' and J'/C can be computed is Gujarat. For this province no dastūrs were formulated, and so one cannot compare its J'/A' with RR. But one can still compare J'/A' in Gujarat with J'/A' in two regions already covered.

We may argue that for determining J' or gross land-revenue collection for Gujarat the jamaʿ needs to be raised by a higher per-centage, than we have allowed in U.P., Haryana and the Panjab. Here the zamīndārs' share was 25% of the revenue of his zamīndārī territory, and not 10%. But as noted already, the zamīndārī areas only formed a part of the whole; and the relative size of the area under the zamīndārī and the raiyatī zones is not known. I have therefore allowed 10% of gross collection as the zamīndārs' average share here as well. Since there are no dastūr-circles, I have taken the sarkārs as units and to work out gross cultivation or A', I have followed the same assumption as for U.P., Haryana and the Panjab.

Table VI

	A' (bīgha-i Ilāhī)	C (bīgha-i Ilāhī)	J' (dāms)	J'/A'	J'/C	A' % C
Ahmadabad	56,77,404	83,33,534	31,18,14,024	54.92	37.42	68.15
Patan	22,99,392	50,14,571	8,34,04,177	36.27	16.63	45.85
Nadaut	4,28,951	5,30,173	1,25,80,562	29.33	23.73	80.91
Baroda	7,10,103	8,04,229	5,88,52,930	82.88	73.17	88.30
Bhroach	7,97,403	18,59,194	3,11,74,934	39.09	16.77	42.89
Champaner	4,60,269	16,12,665	1,50,27,125	32.65	9.32	28.54
Surat	9,99,301	11,34,406	2,72,01,439	27.22	23.98	88.00
Godhra	3,49,223	9,40,820	52,25,891	14.96	5.55	37.13
	1,17,22,604	2,02,29,592	54,52,81,082	46.91	26.95	57.945

We can see from Table VI that J'/A' in Gujarat ranged from 14.96 (Godhara) to 82.88 (Baroda) dāms per bigha; the J'/A' for all the sarkārs is 46.51 dāms/bigha. This shows an incidence which is much in excess of our average for the U.P., but still keeps largely within Abul Fazl's limit of 40 dāms per bigha or rather 44.4 dāms, if we add the zamīndārs' share of 1/10th.

The higher incidence is perhaps partly to be explained by the fact that prices in Gujarat were higher than inland, though how much higher, we cannot say. Gujarat was a large importer of food-stuffs[1] and as such the food prices ought to have been higher in Gujarat than in the inland regions.

Another factor for high revenue incidence could have been the superior cropping pattern, especially manifested in large cultivation of cotton,[2] a crop for which dastūrs, in the zabtī provinces 25 to 40% higher than for wheat. In Baroda the incidence seems extraordinarily high, even allowing for a different price-level. Here even J'/C, which represents the

1. Gujarat is said to have imported wheat and other food-grains from Malwa and Ajmer, and rice from the south (Āīn, I, p.485). See also Irfan Habib, Agrarian System, pp.73-4).

2. See Salbancke's account relating to 1609 in Purchas, III, p.82, and Pelsaert, p.9, for cotton cultivation in Gujarat.

floor, is 73.17 dāms per bigha. This may possibly be attributed to the great fertility of the tract enabling a large area to be under high-grade crops. Furthermore, the region is distinguished for its cotton production. In 1938-39, cotton in Baroda covered 42.74% of the entire sown area; in Ahmadabad district, in the same year, it covered only 23.32% of gross cultivation.[1] On the other hand, in both these districts a much higher proportion of land was under cotton than was under this crop anywhere in U.P.

The statistics of land-revenue-realization thus offer an interesting geographical pattern. In one large block comprising U.P. and parts of Haryana the realization seems to fall much short of standard demand, for the average revenue incidence J'/A' is only slightly more than 2/3rd of the average dastūr-rate (RR). In these regions the average revenue-incidence is also far lower than the floor-limit of 40 or 44.4 dāms/bigha set by Abūl Fazl.

In other parts of Haryana and eastern and central Panjab, however, the realization slightly exceeds the standard demand, and the incidence of gross-realization (J'/A') is about 51% higher than in U.P. It may be noted that while demand as

1. Agricultural Statistics, Vol. 2, 1938-9.

represented by the average dastūr-rate RR does not fluctuate violently from area to area, the incidences of gross-collection (J'/A') generally shows great variations, culminating in the great difference between U.P. and/the Panjab-Haryana region.

In Gujarat the revenue per cultivated bigha was substantially higher (by 40%) than in U.P. but lower (by 8%) than the Panjab. Since Gujarat was a province for which dastūrs were not set; we cannot naturally say how far the actual realization approximated to standard demand.

To what factors one can ascribe the lower revenue incidence in U.P.? The gross collection here sometimes even fell to less than half of the claimed land-revenue. Meerut, for example, has J'/A' = 20.14 and J'/C = 19.87; and must, then, infer that the actual incidence of revenue in that circle was about 20 dāms/bigha. The average dastūr-rate (RR for the circle was 44.40 dāms/bigha i.e. the gross-collection was only 45% of the demand. We come across similar figures in Baran, Awadh and Bahraich, besides other circles.

It would seem either that in these areas, there were some losses from revenue that we have not taken into account or that our assumption about the proportion of uncultivated land included in the ārāzī tends towards underestimation.

As far as the latter possibility is concerned, we have a suggestion from Desai that arazi was not gross cultivated area, but arable land, some of which was cultivated only "occasionally".[1] This thesis of 'shifting cultivation' at first sight appears quite attractive, but on detailed scrutiny encounters some insurmountable obstacles.

For one thing, plotted on the map the dastur-circles with low J'/A' are so interspersed with circles of high revenue incidence that one would be forced to believe that the phenomenon of 'shifting cultivation' was confined to some scattered non-contiguous pockets, not geographically distinct in any sense from tracts around them. Some of these pockets were situated in the Doab region, such as Meerut and Baran. These two circles adjoined Thana Farida, with J'/A' = 47, Delhi J'/A = 39.99, and Sardhana, J'/A' = 51. Similarly the region around Awadh, with J'/A' = 21 had much higher J'/A'. Moreover, according to Desai the "selection of land for cultivation" which was possible due to the low intensity of cultivation was responsible for higher yields.[2] In the South Haryana block,

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1. Ashok V. Desai, 'Population and Standard of Living in Akbar's Time - A Second Look', IESHR, Vol. XVn No.1, January - March, 1978, pp.74 & 76.

2. Ibid., p.76.

A' amounts to about half of the map-area and our estimate of the gross cultivation in 1595 (A') come to around 55% of what it was c.1910. In this block, however, J'/A' is much less than the average J'/A' for U.P. (23.23 dāms/bīgha). Thus while South Haryana seems a most fit case for the existence of 'shifting cultivation' the yields to judge from the dastūr-rates were lower than in U.P. Apart from the low dastūr for individual crops (Chapter IV) the average weighted dastūr-rate (RR) here is only 36.45 dāms/bīgha, i.e. considerably lower than the average dastūr-rate for U.P.

The low revenue-incidence in U.P. cannot, therefore, be explained by assuming a very high component of fallows or abandoned lands in the ārāzī.

We are now left with the possibility that the loss of revenue in U.P. was more than what we have allowed for. We feel pretty certain about the allowances sanctioned for the local village officials (muqaddam , chaudhrī , qānūngo and patwārī), since these are specified in the Āīn. The evidence about the amount allowed for the cost of collection though late is sufficiently circumstantial to invite trust. No direct information about the proportion of the zamīndārs' share is, however, forthcoming, from the Āīn or any other source belonging to the 16th or even the early 17th century. But one way of

checking the different magnitudes of the zamīndārs' share of revenue consists in making estimates of the zamīndārs' expenditure by the help of Āīn's information about their retainers. The method used for attempting these estimates is explained in Chapter VII.

The table below gives the zamīndārs' expenditure (ZE), J'/A' and J'/C for some dastūr-circles and sarkārs in U.P.

Table VII

Dastūr-circle/sarkār		ZE as % of J	J'/A'	J'/C
Dastūr-circle	Deoband	4.92	42.85	39.10
,,	Lakhnaur	62.29	16.52	7.42
Dastūr-circle	Delhi (East of Jamuna)	3.80	39.99	23.93
,,	Meerut	48.69	20.14	19.87
Dastūr-circle	Awadh	14.99	40.24	16.97
,,	Khairabad	7.32	39.01	62.46
Sarkār Kol		22	40.24	41.21
,, Kanauj		23	39.01	27.33
,, Kalpi		10	69.33	21.92
Dastūr-circle	Agra	16.53	50.66	49.79

The general correlation between the high expenditure of zamīndārs as % of jama' and low incidence of gross-collection is noteworthy. We are accordingly led to the inference that it was not really the actual amount of land-revenue extracted from the peasant which was low in U.P., but that the Mughal administration was often conceding an exceptionally large share to zamīndārs or local potentates in many localities.

This unevenness of the zamīndārs' share was not confined to the inland provinces. In sūba Gujarat again we find an obvious inverse relation between the zamīndārs' expenditure and incidence of gross-revenue collection -

Sarkār	ZE as % of J	J'/A'	J'/C
Godhra	44	14.96	5.55
Baroda	4	82.88	73.17

Our figure (35 dāms/bīgha) for incidence of gross-collection in U.P. may therefore be an underestimate only because we have assumed the zamīndārs' share at a uniform 10% of revenue. If we roughly take the zamīndārs' share to average somewhere between 15 and 20 per cent of gross land-revenue, the incidence of gross-collection for U.P. would rise to between 38 and 42 dāms per bīgha. This estimate too is rather arbitrary but it does not seem far wrong, keeping in view the fact

that there is a cluster of twelve *dastūr*-circles with revenue rate varying between 30 and 50 *dāms* per *bīgha* of cultivation, (see Table II).

Incidentally, it is of some interest that the incidence of revenue in the more distant provinces was not necessarily lower than in the central provinces. We have already seen that it was quite high in Gujarat. But eastward too, as we pass from *sūba* Allahabad into *sūba* Bihar, we can discover no immediate fall in revenue realization per *bīgha*.

Following the methods of estimation adopted by us we find that J'/A' in the measured *mahals* of *sarkār* Bihar amounted to 142.46 *dāms* and J'/C to 24.49. Since A' amounted to only 17.97% of gross cultivation of 1899-1900, measurement in these *maḥals* was obviously very incomplete. But the floor for revenue incidence set by J'/C must still receive consideration. One may compare it with J'/C of the two easternmost localities of *sūba* Allahabad, viz., 28.05 of *dastūr*-circle Ghazipur and 23.47 of *dastūr*-circle Banaras. The J'/C for *sarkār* Bihar falls quite conveniently within this range.

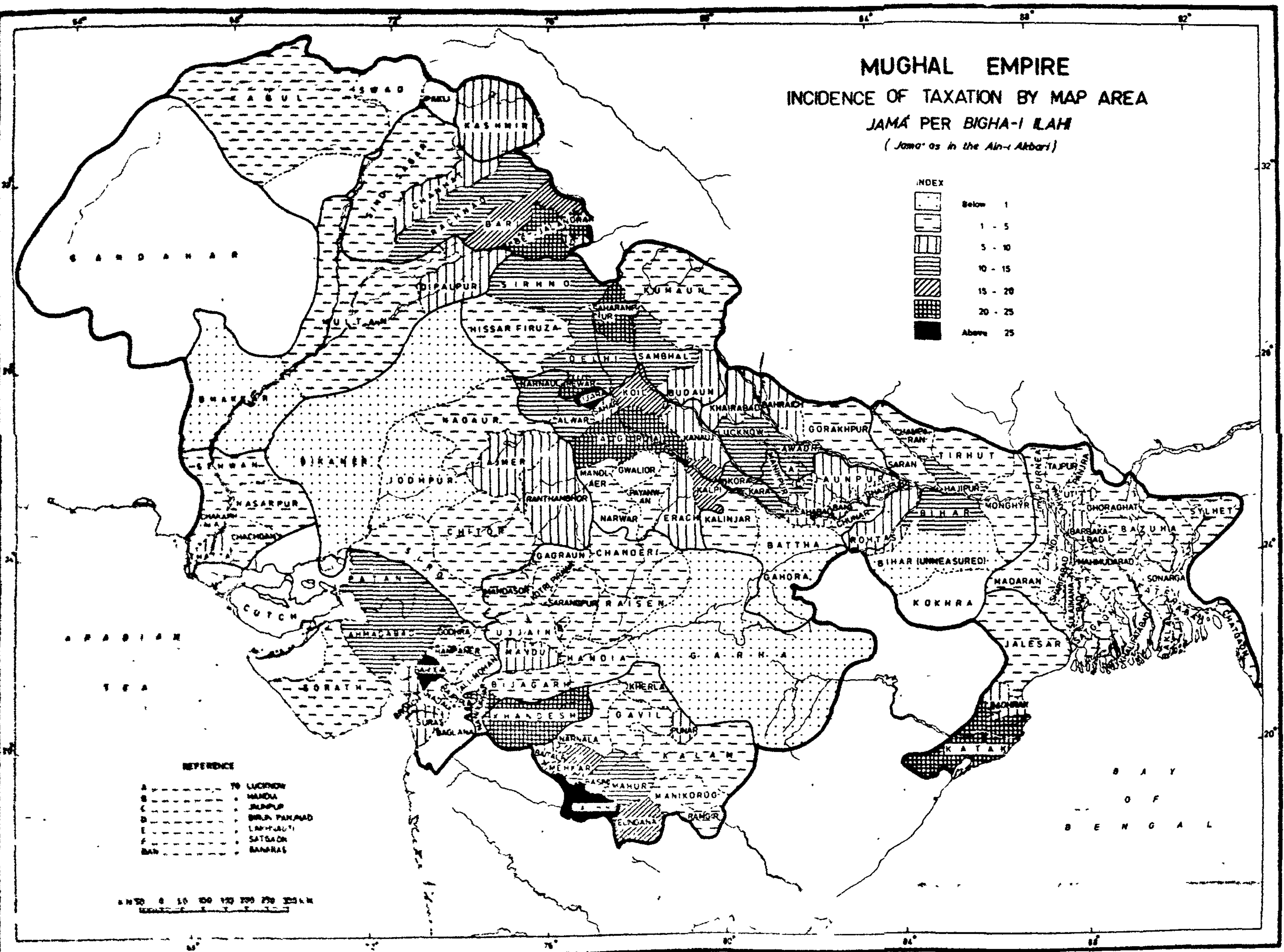
V

For the other parts of the Mughal Empire it does not seem possible to determine the revenue-incidence per unit of area of cultivated land on the same lines as we have done for U.P., the Panjab, and Gujarat. In the remaining sūbas either the measurement was not undertaken by Akbar's administration (as in Bengal, Berar, Khandesh and parts of Ajmer, Malwa and Bihar, etc.) so that no ārāzī figures are available; or the measurement was so incomplete that the ārāzī figures cannot be used upon for forming any estimate of the gross cropped-area (such is the case for large parts of sūbas of Malwa, Bihar and Ajmer). These areas (except for portions of Malwa and Ajmer) were not under the zabt system of assessment; thus the dastūr-rates fir the various crops too were not formulated for them.

In the absence of the ārāzī-statistics the map-area offers us the only means of studying comparative revenue-incidence in these regions. I have computed the jama' incidence per bigha of map-area[1] (J/M) for all the sarkārs (see Map). The sūba figures are set out in the table below.

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1. The map-area is based on Irfan Habib's, Atlas of the Mughal Empire (in press) and the jama' figures are as calculated by me after collating the MSS and verifying the totals of parganas. They do not necessarily conform to sarkār/sūba totals given by Abūl Fazl himself.



MUGHAL EMPIRE
INCIDENCE OF TAXATION BY MAP AREA
JAMA' PER BIGHA-I ILAHI
(Jama' as in the Ain-i Akbari)
INDEX
Below 1
1 - 5
5 - 10
10 - 15
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20 - 25
Above 25
REFERENCE
A .... TO LUCKNOW
B .... MANDIA
C .... JAUNPUR
D .... BIRUN PANJNAD
E .... LAKHNAUTI
F .... SATGAON
BAN .... BANARAS
KABUL
SWAD
KASHMIR
QANDAHAR
BHAKKAR
SEHWAN
HASARPUR
CHACHGAON
CUTCH
ARABIAN SEA
MULTAN
DIPALPUR
SIRHIND
HISSAR FIRUZA
NAGAUR
BIKANER
JODHPUR
AJMER
CHITOR
RANTHAMBHOR
PATAN
AHMADABAD
SORATH
GODHRA
UJJAIN
MANDU
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MEHKAR
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TELINGANA
RAISEN
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CHANDERI
GAGRAUN
GARHA
GAHORA
BATTHA
KALINJAR
ERACH
NARWAR
GWALIOR
KALPI
KORA
KARA
DEHLI
SAMBHAL
SAHARANPUR
KUMAUN
BUDAUN
KOIL
KANAUJ
ALWAR
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MEWAT
LUCKNOW
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JAUNPUR
GHAZIPUR
CHUNAR
ROHTAS
SARAN
CHAMPARAN
TIRHUT
HAJIPUR
BIHAR
BIHAR (UNMEASURED)
MONGHYR
PURNEA
TAJPUR
KOKHRA
MADARAN
JALESAR
KATAK
GHORAGHAT
BARBAKABAD
BAZUHA
SYLHET
SONARGAON
MAHMUDABAD
CHATGAON
BAY OF BENGAL

Ch V

Map I

Table VIII

Sūba	J/M
Bengal	2.69
Orissa	7.84
Bihar	4.34
Allahabad	5.76
Awadh	7.14
Agra	5.56
Malwa	1.96
Berar	
Gujarat	7.91
Ajmer	2.24
Delhi	8.43
Lahore	9.76
Multan	2.23
Thatta	2.24
Kashmir	5.19
Kabul	2.01
Khandesh	24.13

As might be expected, the ratio of the *jama'* to map-area varies from province to province. The range of

variations is quite wide, from 24.13 (Khandesh) to 1.69 (Malwa). Clearly the primary factor to consider, in explaining the variations, is the varying extent of gross-cultivation in relation to the map-area. In regions where the cultivated area constituted a larger portion of the map-area we should expect the J/M to have been high; and, conversely, in sparsely cultivated regions the J/M should have been low. When we compare the J/M of certain sūbas with the ratios of gross-cultivation to the Map Area in modern territories roughly corresponding to them, the correlation between the two turns out to be striking. This can be seen from the following table, where the area of Gross-cultivation is taken from the Agricultural Statistics for the year 1897-98.

(A) Sūbas where both J/M and modern GC/M are high:

	J/M (dāms/bīgha)	GC as % of M
Khandesh	24.1	60.2
Gujarat	7.9	56.7
Berar	12.2	58.6
Agra	11.1	
Allahabad	5.8	61.3
Awadh	7.1	
Delhi	8.4	
Lahore	9.6	54.3

(B) Sūbas where both J/M and Modern GC/M are low:

	J/M (dāms/Bīgha)	GC as % of M
Ajmer	2.2	24.6
Thatta	2.4	36.4
Multan	2.2	19.9
Malwa	1.9	33.9

We thus find that the incidence of jamaʿ is low where the gross-cropped area forms a proportion of the map-area lower than 40%; in such cases J/M never exceeds 2.4. Where GC exceeds 50% of the map-area, J/M does not fall below 5.8. All this suggests that in these regions, the extent of cultivation was the major factor in determining the variations in the incidence of jamaʿ per unit of map-area.

But in some other sūbas, positive correlation with GC/M is not obtained. For example, while GC forms 67% of the map-area of Bengal and 68.4% of Bihar, the J/M of the two sūbas is respectively 2.69 and 2.34 only. Here some other factors would seem to be at work. The most obvious is the price-level: Abūl Fazl tells us quite expressly that Bengal was marked by a constant prevalence of low prices (arzānī).[1] The low J/M in

1. Āʾīn, I, p.389.

Bengal and probably Bihar could, therefore, be best ascribed to the lower price-levels prevailing in the eastern regions. It is noteworthy that the jamaʿ-incidence was below 5 dāms in 14 out of a total of 19 sarkārs in Bengal; while in the sarkārs around Hugli River (namely, Lakhnauti, Barbakabad, Tanda, Sharifabad and Sulaimanabad) it exceeded 5 dāms. One may explain this, again, by suggesting that a slightly higher price-level prevailed in this commercially-oriented region (see Map). We have already d seen that the high revenue-incidence in Gujarat is probably to be ascribed partly at least to its high prices, in turn caused by its great commercial orientation and urbanization.

High 'leakages' from gross realization too could furnish another reason for the low J/M in certain areas. In such cases, high gross-realization might yet be accompanied by low net revenue-realization. The jamaʿ might have been low, if the subordinate claims on the agrarian surplus, notably the share of the zamīndārs, was large. We have already noted in Section IV that there was an inverse relationship between the jamaʿ-incidence and the share of the zamīndārs in several areas. The low J/M for Bihar could again partly be attributed to the fact that here the administration had to concede a larger share to the local potentates (zamīndārs' expenditure (ZE)=22% of the

jama').[1] An analysis of the figures at the sarkar-level makes this even more obvious:

	J/M	ZE as % of J
Bihar (unmeasured)	0.75	32
Champaran	1.50	67
Tirhut	2.80	45
Bihar (measured)	13.29	3
Hajipur	10.33	4

In the case of certain other regions we could say with some degree of confidence that the J/M was in many cases low simply because administrative control was lax, and the jama' more or less represented tribute, and was not fixed according to the actualities of revenue-realization. If the jama' is stated in round figures, one could fairly presume that it was not based on actual assessment. In sarkār Garh of the ṣūba of Malwa the jama' for all the parganas is in round numbers, while the J/M amounts to a trifling 0.16 dāms per bīgha. The low J/M here is obviously due to lack of administrative control, accentuating the already low ratio of gross-cultivation to the map-area owing to the presence of the Great Central Indian Forests.

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1. See Chapter VI.

However, we come across an interesting situation in ṣūba Berar. Here the jamaʿ is stated all through in round figures but the J/M is comparatively high, viz., 12.16 dāms. Out of a total 13 sarkārs, J/M either exceeds, or is around 10 dāms in 7 sarkārs. This is partly explained by a fairly high ratio of Gross cultivation to map-area, to judge from modern figures. But in the sarkārs of Kherla and Narnala where Abul Fazl mentions strong Gond zamīndārs,[1] the J/M falls to 2.2 and 2.6 respectively: Here, apart from the hilly terrain of these sarkārs, the zamīndārs' larger share in the surplus must also be held responsible for the fall in J/M.

It appears, then, that the incidence of jamaʿ not only varied according to the extent of cultivation,[2] but there were other contributary factors that affected it, the price-level, the share of the zamīndārs in the gross revenue-realization, and, finally, the degree of administrative control.[3]

In all this we are assuming that the magnitude of land-revenue demand in relation to produce was uniform in all

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1. Āʾīn, I, p.477.

2. A possible factor we have ignored in this discussion is the pattern of cropping: an area growing higher-priced market crops might have a larger jamaʿ. At a regional level, such a pattern would have made for a higher price-level; and thus the price-factor should probably cover its influence.

3. Cf. Irfan Habib, Agrarian System, pp.193-194.

regions. It too varied: in coastal Gujarat, for example, it seems to have represented a higher share of the produce than in other parts of the Empire, while in parts of Rajasthan lower proportions prevailed. We must remember all the time that in jama' we simply do not have the total of a uniform share of the surplus, but that absolute portion while the Mughal ruling class was able to appropriate for its own use and consumption out of the total agricultural (and non-agricultural) product of the country. If the share in it of the net land-revenue collected was high, the jama', in so far it could represent physical quantities of the produce would be high; but, in money terms, this would be moderated by the varying local price-levels. In other words, the unknown complexities in a general discussion of the kind are very many; but we have, more or less, to live with such difficulties in an analysis seeking to cover the whole of the Mughal Empire.

LOCAL CLAIMS TO AGRARIAN SURPLUS

Chapter VI

REVENUE GRANTS

In addition to the figures of the measured area (ārāzī) and the revenue (jamaʿ/naqdī), in his statistical tables of the "Twelve Sūbas" Abūl Fazl also furnishes us with another set of figures given in dāms, in a column carrying the heading suyūrghāl.[1] For the exact nature of suyūrghāl, we can turn to another chapter in the Āʾīn-i Akbarī, entitled "Āʾīn-i Suyūrghāl".[2] Here Abūl Fazl tells us that the grants that the Emperor made in cash were known as wazīfa, while those given in land were designated milk or madad-i maʿāsh. It may be inferred from this that the land and cash grants taken together were comprehended under the term suyūrghāl.[3] But Abūl Fazl himself has used the word suyūrghāl quite loosely, making it at times a synonym of madad-i maʿāsh, as when he says that "the suyūrghāl of the Afghans and the Chaudhuris was converted into khālisa"; or

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1. Āʾīn, II, 348-90.
2. Ibid., pp.198-9.
3. Cf. W.H. Moreland, Agrarian System of Moslem India, p.277; and Irfan Habib, Agrarian System, p.313.

when he speaks of the suyūrghāl land (zamin-i suyūrghāl). Indeed, when used by writers other than Abul Fazl, it almost always appears as a synonym of madad-i maʿāsh.[1] In any case, the land grants must always have formed the bulk of the suyūrghāl grants.[2]

It would seem that Abul Fazl was not only using a term which was different from the common, or, even perhaps the technical one, but the unit too, in which he has stated it, was rather unusual. Ordinarily the grants were made in terms of area; and the farmāns or other deeds of grant almost invariably made provision for the specified area to be assigned out of land excluded from assessment (khārij-i jamaʿ).[3] However, Abul Fazl not only insists upon giving the amount of revenue alienated by the Emperor through grants, in terms of money (dāms), but also definitely states that these figures formed part of the jamaʿ/naqdi figures. While recording the totals for the sūba, he records, first, the total jamaʿ of the sūba and then "from out of it" (az-ān miyān), the suyūrghāl of the sūba.

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1. See, for example, Mazhar-i Shāhjahāni, ed. Husamuddin Rashidi, Karachi 1962, p.73.

2. There is, to my knowledge, only one statistical statement, which brings out the relative significance of land grants and cash grants. The Mirāt-i Ahmadi, I, 25-6, puts the total jamaʿ alienated through madad-i maʿāsh in Gujarat at 1,20,00,000 dāms, while it puts the total amount of cash grants (inām) in the sūba at Rs.40,000 per annum. Since 40 dāms went to the rupee, the cash grants amounted to only 13.33% of the estimated income from the land grants.

3. Irfan Habib, Agrarian System, p.303.

A simple check shows that his words are precisely supported by his figures. In no single pargana do the suyūrghāl figures exceed the jamaʿ. The only exception is offered by the statistics for one pargana in suba Berar; but this is probably due to a clerical error.[1] Even more significant is another feature of the statistics. In the case of a number of parganas, when we subtract the suyūrghāl from the jamaʿ, we get round figures, that is, rounded to thousands and, in many instances, to lakhs. By way of illustration, I offer the figures given against few parganas picked at random:

A Pargana	B Sarkār &	Sūba	C Naqdī (Jamaʿ)	D Suyūrghāl	C minus D
Wazirpur	Agra	Agra	20,09,255	9,255	20,00,000
Meerut	Delhi	Delhi	49,91,996	3,41,096	46,50,900
Kheri	Khairabad	Awadh	32,50,522	50,522	32,00,000

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1. Blochmann's edition enters the figure of 3,60,000 dāms for pargana Jintur, sarkār Pathri, while recording 12,00,000 dāms for suyūrghāl. But Br. Mus. MSS Add 6552 and Add 7652 show no such discrepancy in the case of this mahal, reading the respective figures as 16,00,000 and 4,00,000. These MSS, on the other hand, have four such cases of excess of suyūrghāl in the same sarkār. But three of these are explained by the misplacing of the figures in the naqdī column owing to the omission of a pargana (Kosri, which is duly recorded in Blochmann) which should have been placed just after the eleventh entry. When the figures are adjusted accordingly, the excess disappears in three out of the four cases. Only the pargana of Kosri would remain (after our adjustment), with naqdī at 36,00,000 and suyūrghāl at 64,00,000 dāms. But it is probable that 64,00,000 is an error for 24,00,000 (bist being often incorrectly written shist). The stated total for the suyūrghāl of the sarkār would be closer to the actual if this reading is assumed. (The stated total, 1,15,80,954 compares with 1,63,36,154 if we read shist, but with 1,23,36,154, if read bist).

In Appendix I, I have set out all cases of the above kind that I have been able to detect in the Ā'īn's statistical tables.* The total number of entries, where the net jama' (that is, gross jama' less suyūrghāl) for parganas turns out to be in round figures, is 71, out of 781 entries under all the sūbas, excluding Kabul and Berar.

Among exact (unrounded) figures a rounding to lakhs can, of course, happen accidentally only in one case out of 100,000. Here, however, the actual frequency of such roundings to lakhs is nearly one out of ten. The conclusion is, therefore, inescapable that the jama' figure was determined in the round first and then the detailed suyūrghāl was added to it to give the gross jama' or naqdī figure for each pargana.*

It is interesting to note that the reverse instances, that is, of rounding resulting from the addition of suyūrghāl to naqdī (jama) figures, are no more than two and these are rounded to hundred only.* In other words, while an accidental rounding to hundreds is possible in one out of every hundred entries, here in 781 entries we have only two cases of such rounding (Chandaus in sarkār Kol, sūba Agra, and Jais in sarkār Manikpur, sūba Allahabad). Here, therefore, the rounding is purely accidental#

Another feature that strikes one is this.* Out of the 781 entries in the column of suyūrghāl, only two are rounded to

thousands, and nine to hundreds, while all the remaining 770 are exact. But out of the *jama'* figures for the corresponding *parganas* six are already round; and in seventy one cases detected by us, there is concealed rounding, that is they were originally round and have become exact only due to the addition of *suyūrghāl*. This, therefore, suggests that the estimate of income from *madad-i ma'āsh* lands was based on a more detailed assessment than was the estimate of realization from the general revenue-paying lands. It is indeed possible that since the latter category had to be assigned in lieu of salaries of *mansabdārs*, the net *jama'* figures were rounded off simply for convenience of assigning the lands against salary-claims which were normally stated in round figures.[1]

The question naturally arises as to how the Mughal administration obtained estimates for the revenue-paying capacity of *suyūrghāl* lands, when it neither collected the land-revenue on those lands, nor needed the figures for formulating the *jama'* or estimated revenue-income for assigning *jāgīrs*. Since the *suyūrghāl* figures themselves are not given in a rounded form, we are led to suppose that they are not simply rough estimates, but presumably built up of exact totals

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1. See the pay-schedules in the *Āīn-i Akbarī*, I, pp.180-6.

from detailed figures. Even if we assume that these figures are really those of jama', being the estimate of revenue that the land paid when it was originally granted, we are faced with the problem that originally the lands assigned in grants had to be at least half-waste,[1] while in fact, in most cases the land was wholly waste and had not been paying revenue (khārij-i jama').[2] It is, therefore, unlikely that the amount stated under suyūrghāl is the amount of revenue alienated when the grant was originally conferred.

One possible explanation for the detailed figures in dāms for suyūrghāl in the Āīn may, however, be hazarded. By a farmān issued in 1578, whose text has fortunately survived, Akbar ordered the consolidation of the scattered holdings of the grants in a few select villages in each pargana.[3] This was done ostensibly to protect the grantees from oppression by the jāgīrdārs and revenue collectors, but really, perhaps, to prevent fraud on the part of the grantees.[4] At any rate, it is said to have caused much distress to the grantees.[5]

1. Āīn, I, p.199.

2. Cf. Irfan Habib, Agrarian System, p.303.

3. Allahabad, 24. I have used a transcript of the document in the Department of History, A.M.U.

4. Abul Fazl (Akbarnāma, III, 240; Āīn, I, 198) in fact says that dishonest grantees were holding lands at more than one place on the basis of the same deed of grant.

5. See Badāūnī, Muntakhabu-t Tawārīkh, II, p.254.

The process of concentrating all grant-lands in a few earmarked villages involved an exchange of existing grant lands with lands hitherto paying revenue. The exchange must have involved valuation of the lands on either side. If lands yielding a certain amount of revenue were being transferred to the grantees, it must have been important for the administration to ensure that the grantees relinquished lands that could yield comparable revenue, that is, be capable of being assigned the same jamaʿ as was borne by the lands transferred in return. The very measure thus required the Mughal administration to estimate the revenue capacity of the lands already held in grants, and then to transfer lands, yielding identical jamaʿ, into the hands of the grantees. Our suggestion then is that the suyūrghāl statistics of the Āʾīn were based on the figures of jamaʿ standing in the records against lands given over to the grantees in the course of implementing the farmān of 1578.[1]

This is corroborated by the fact that suyūrghāl figures are not recorded in the Āʾīn for regions such as Bengal, Kashmir, Sind, Qandahar and Khandesh, which were not

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1. A small point to consider is that in 1578 the more common unit of currency was tanka; so that the amounts estimated at that time required later to be converted into dāms. Since two dāms went to a tanka, this conversion should have made all the whole numbers even. But we find that a number of suyūrghāl figures are in odd numbers. Since tankas in the original estimates could have been carried to halves, the evidence cannot rule out our suggestion, though admittedly it does not also give it positive corroboration.

under Akbar's effective control around 1578. There are only two exceptions, Kabul and Berar.

Though Kabul was outside Akbar's Empire in 1578, we have five entries for suyūrghāl in its tables. None of these figures is round; nor do any round figures result if suyūrghāl is subtracted from the jamaʿ. It is possible that some concentration of land-grants took place in Kabul subsequent to the annexation and that the suyūrghāl figures are a result of that process. But there is no support for this inference from any document.

Berar was also not subjugated until 1596. Blochmann's figures for this ṣūba are in many cases not supported by two of the best surviving MSS of the Āʾīn,[1] which themselves do not give identical readings. However, we can still attempt an analysis of the Berar statistics on the basis of a collation of figures given in Blochmann's text with the two MSS. We find that for Berar, there are 46 suyūrghāl entries in all. Out of these, 33 are in round numbers and only 13 are exact. (In eleven cases out of the latter thirteen, the jamaʿ becomes round if we subtract the suyūrghāl from it). It would thus seem that the suyūrghāl figures in Berar were rough estimates

1. Br. Mus. Add 6552 and Add 7652.

rather than the results of detailed assessment of suyūrghāl land. They are, therefore, on a different plane altogether from the suyūrghāl statistics of other sūbas.

Indeed, Abul Fazl's words preceding the statistical tables of Berar indicate that a very summary procedure had been adopted in that sūba. The revenue figures were taken from the records of the previous administration, being stated originally in Berari tankas. These were converted into dāms, by multiplying the original figures by 16. We might assume then that the suyūrghāl figures were also similarly dealt with. Taking the round figures for suyūrghāl, we find that out of the 33 round figures, all except three, are divisible by 16. But when we take the exact figures, only one out of 13 is divisible by 16. It seems, then, that except for these few parganas, in all other cases, Abul Fazl simply borrowed summary estimates for land-grants from the previous administration and transferred them to his statistics, doing no more than converting them into dāms.

On the whole, then, it looks as if we may accept the suyūrghāl figures (except in the sūbas of Kabul and Berar) to be those of 1578. Moreover, and this is much more important, we may use them with some confidence for estimating the amount of revenues alienated in the form of grants. Before we do so, it is well to remember that these figures represent only the

grants made by the Emperor; the jāgirdārs too made separate grants. The latter grants were however temporary, being only valid for the terms of the jāgirdārs' own assignments. The actually important kind of grantees was therefore that of the makhādim-i 'uzzām, or Imperial grantees.[1]

This class, according to Abūl Fazl, was made up of four categories of persons, namely, seekers after true knowledge; devout persons who had abandoned the world; destitutes not possessing the capacity of earning their livelihood; and persons of noble lineage who would not "out of ignorance" take to any employment.[2] It seems that the grants were largely meant only for the people falling under any of these four categories, since Abūl Fazl informs us in the same chapter that the suyūrghāl lands of Chaudhuris (local hereditary officials) who obviously did not belong to any of these categories, were converted into khālisa. Elsewhere, he adds that the lands were liable to be confiscated if the grantees were found to be "in service" (naukar).[3]

We may now pass on to estimate the proportion of the total revenue-income this class of grant-holders appropriated.

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1. Āin, I, 196.
2. Ibid., I, 198.
3. Ibid., I, 197.

This can be estimated broadly from the per-centage which the suyūrghāl bore to the gross jamaʿ recorded in the Āʾīn. I shall take up the statistics of the four central ṣūbas, that is Agra, Delhi, Awadh and Allahabad. Abūl Faẓl gives his own totals for ṣūbas and sarkārs. Since these do not often tally with the totals of his own pargana figures, I have calculated the ṣūba-level totals of suyūrghāl as well as jamaʿ from the detailed pargana figures of the Āʾīn. Using these figures, we find that the suyūrghāl accounted for 4% of the total jamaʿ in Agra; 5.84% in Delhi, 4.31% in Awadh; and 5.02% in Allahabad.[1] These are not impressive proportions by any means. But at the lower territorial (pargana/maḥal) levels, the per-centage varies a great deal.

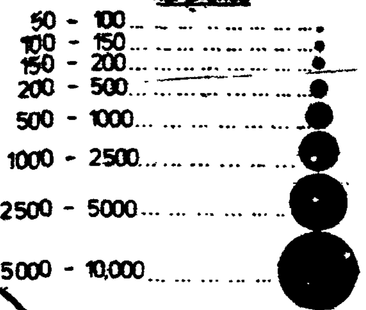
In the ṣūba of Agra, in pargana Santhavari of sarkār Tijara, as much as 65.79% of the jamaʿ is accounted for the by suyurghal. But this is an isolated instance and among all the 243 parganas of the ṣūba, only in 7 does the share exceed 10% the jamaʿ. In Delhi while the maximum attained is 36.88% in pargana Shakarpur of sarkār Delhi, there are 20 parganas out of 213 where the suyūrghāl exceeds 10% of the jamaʿ. In Awadh and Allahabad, the maxima reached are not so high, being 23.31%

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1. Cf. Irfan Habib, Agrarian System, pp.313-4. My figures are slightly different from his figures since I have taken the pargana totals, while he has expressly based his calculation on the stated sarkār totals.

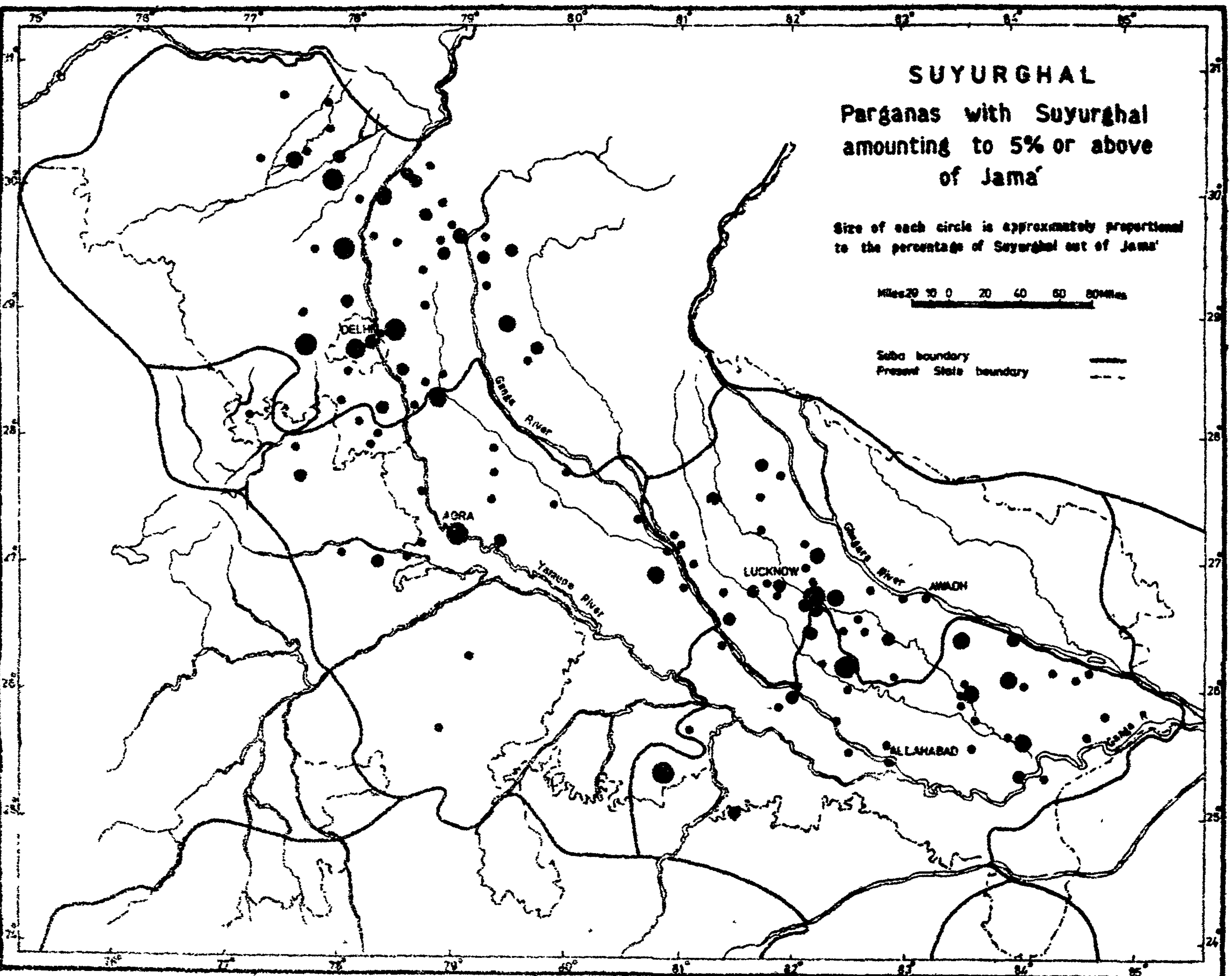
(*pargana* Ibrahimabad, *sarkār* Awadh) and 21.30% (*pargana* Mahoba, *sarkār* Kalinjar); but there are a comparative larger number of instances of appreciable alienation of the *jamaʿ* in *suyūrghāl*. In Awadh, in 9 out of 128 *mahals* and in Allahabad in 13 out of 120 *mahals*, the proportion of revenue claimed by the grantees exceeds 10%.

Plotted on the Map, the *parganas* representing high and low *suyūrghāl* can be represented in two ways. One is by plotting the absolute figures of *suyūrghāl* for each *pargana*. This, however, may give a false impression in respect of *parganas* where the *suyūrghāl* figure was high because the area of that *pargana* (and so its *jamaʿ* as well) was large. This for example, is the case with Badaun, Bahraich and Kalpi. The other method would be to plot the per-centage of *suyūrghāl* out of *jamaʿ* in each *pargana*. Here while we can have a better picture of the relative amount of *suyūrghāl*, there is still the danger of a misrepresentation of an opposite kind. A small *pargana* may contain a small amount of *suyūrghāl* in absolute terms, and yet the *suyūrghāl-jamaʿ* ratio may be very high, just because its *jamaʿ* is also low. On the other hand, large areas given in *suyūrghāl* in a large *pargana* may escape notice. In order to have a more reliable view of the distribution of *suyūrghāl*, it would be better to use both methods and then intercheck. I, therefore, present maps I & II, based on these


SUYURGHAL
Parganas with Suyurghal of 50.000 dams and above
REFERENCE
50 - 100
100 - 150
150 - 200
200 - 500
500 - 1000
1000 - 2500
2500 - 5000
5000 - 10,000
DELHI
AGRA
LUCKNOW
AWADH
ALLAHABAD
Ganga River
Yamuna River
Gomti River
76°
78°
80°
82°
84°
30°
28°
26°
24°
INDEX
Suba boundary
Miles 20 10 0 20 40 60 80 Miles
KM 20 0 20 40 60 80 100 KM

Ch VI

Map I


SUYURGHAL
Parganas with Suyurghal amounting to 5% or above of Jama'
Size of each circle is approximately proportional to the percentage of Suyurghal out of Jama'
Miles 20 10 0 20 40 60 80 Miles
Suba boundary
Present State boundary
DELHI
AGRA
LUCKNOW
AWADH
ALLAHABAD
Ganga River
Yamuna River
Ghagara River
Ganga R.
75°
76°
77°
78°
79°
80°
81°
82°
83°
84°
85°
31°
30°
29°
28°
27°
26°
25°
24°

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Map II

two methods.[1]

A comparison of the two maps shows that there were certain regions of high concentration of suyūrghāl. It is possible to identify them as follows:

Block A: The region from Sirhind extending towards the upper Doab, and including the cis-Jamuna region, northern Doab and the adjacent trans-Ganga tract, covering parts of the Rohtak, Gurgaon and Rewari districts in Haryana and the Saharanpur, Muzaffarnagar, Meerut, Bulandshahar, Bijnaur, Moradabad and Badaun districts in U.P.

Block B: Agra. This region though small in size is quantitatively quite important. The districts involved are Agra and Mathura. The peculiarity is that except for a very high figure of suyūrghāl in the havelī (headquarters) pargana of Agra, the suyūrghāl is not impressive, and the suyūrghāl figure for the havelī-pargana amounts to 60.61% of the suyūrghāl of the entire sarkār of Agra.

Block C: A region extending from around Kanauj to Faizabad towards the east and to Kara-Manikpur in the south-east. This

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1. These maps draw for their boundaries and pargana locations, upon sheets 4A, 6A and 8A of Irfan Habib, Atlas of the Mughal Empire (in press).

very large block covers the districts of Hardoi, Sitapur, Lucknow, Unnao, Faizabad, Rae-Bareilly, Kanpur and Fatehpur.

Block D: High suyūrghāl figures also appear in the region extending from Benaras (Varanasi) northwards up to river Ghaghra, covering Jaunpur, Azamgarh and Partapgarh districts and part of Faizabad district.

It is interesting to examine why a distinct pattern like this should emerge. One possible hypothesis can be that the suyūrghāl area was large where urban population was more numerous. I have attempted a comparison with the urban population as per cent of total population district-wise, based on the 1881 census; the urban population is taken to be the population of all towns with populations of 5,000 and above. The per-centage of urban population in each district has been worked out and plotted on the map. The districts have been divided into three classes (a) urban population less than 10%; (b) from 10 to 15%; and (c) above 15% (Map III). But this representation suffers from a defect. The significance of per-centage depends also on the size of a district. A small town, in a small district, may give a misleading high proportion for urban population in that district. Therefore, I have also given a map showing all towns with population 10,000 or above in 1881 (Map IV).

It appears from the comparison of the two maps (III and IV) that while our blocks A and B match fairly well with the areas of urban concentration (1881) refelected by high per-centage of urban population or concentration of big towns, the suyūrghāl concentrations of the central-eastern blocks C and D are not reflected in corresponding urban concentration in the same districts in 1881. High suyūrghāl figures on such isolated localities as Lucknow, Banaras and Allahabad, are however matched by high urban concentration in 1881.

Since it is possible that shifts of urban population took place between the beginning of the sixteenth century and the closing years of the 19th century, I have tried yet another device to check the hypothetical linkage between high suyūrghāl and urban concentrations.

The archaeological remains of Mughal times (16th and 17th centuries) can be taken as evidence for sites and, with much reservation, for comparative sizes of towns. I have been able to use an unpublished map of 16th and 17th century monuments and archaeological remains in Uttar Pradesh, based entirely on Fuhrer's Monumental Antiquities & c. in North Western Provinces (Allahabad, 1891) prepared by Irfan Habib. My map V is based on this larger map.[1]

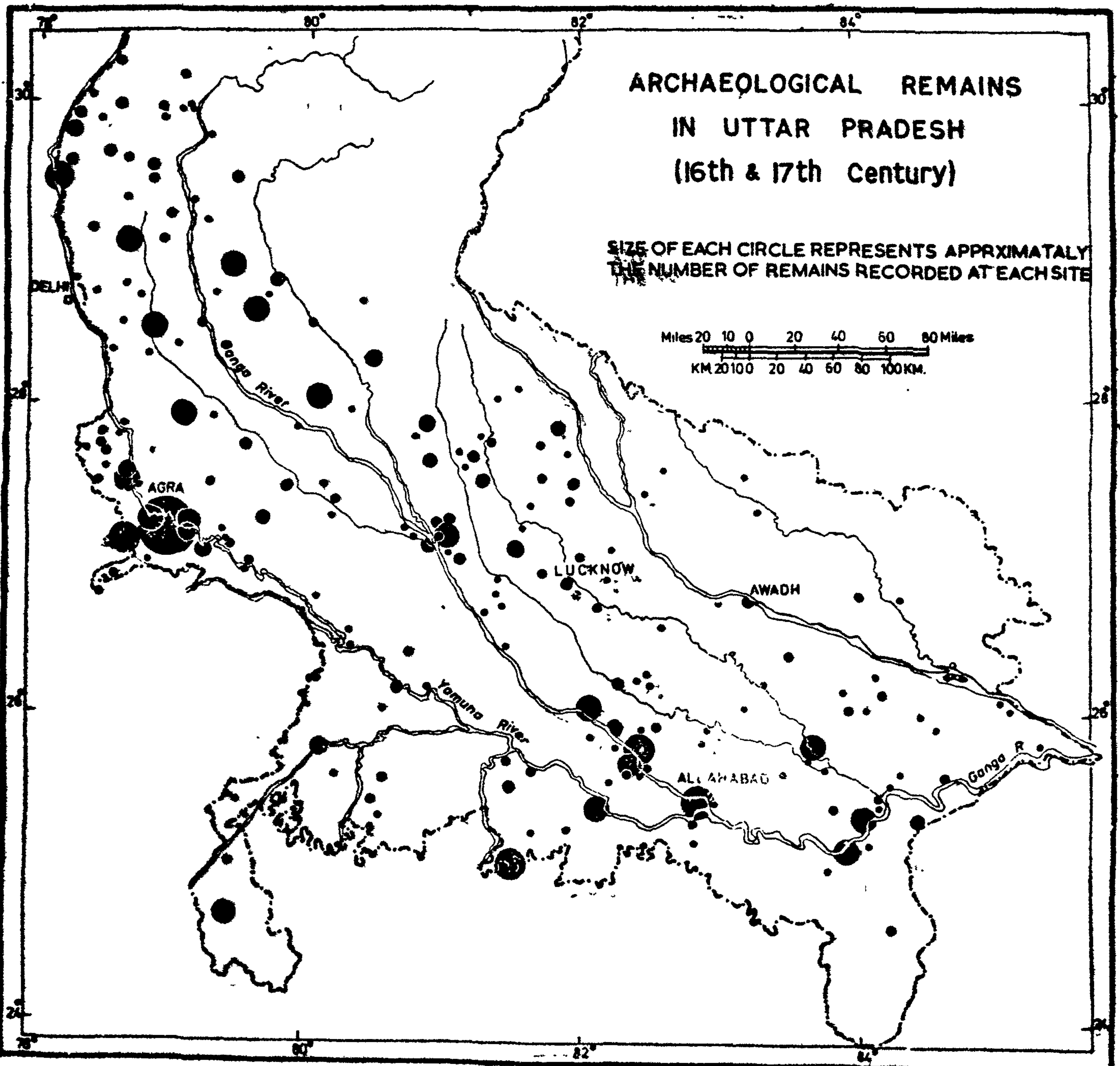
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1. Cf. also Zahoor Ali Khan,'Medieval Archaeological Remains in Uttar Pradesh - A geographical Study! Read at IHC, 1975.

The comparison of maps I - II and V shows that our Block A (excluding the areas outside U.P.) accords with a distinct region of high concentration of monuments in map V. Block B too matches well with the high density of monuments in this region. However, the area covered by block C in our maps I and II does not appear as a single region of concentration; there are two distinct clusters lying within this region. One comprises Kanauj and the trans-Ganga tract from Shahjahanpur to Bilgram, and extending further eastwards from this line. The other cluster comprises the lower Doab with the adjoining trans-Ganga tract. In the remaining part of the region of large suyūrghāl grants, my map V shows normal spread with no distinguishable cluster. The high figures of suyūrghāl in Block C accord, broadly speaking, with the density of monuments in that area.

In addition to this, there are some interesting instances of correlation. The isolated pargana of Kalinjar with high suyūrghāl, for example, corresponds with the large complex of monuments at Kalinjar.

On the other hand, the area with low suyūrghāl, figures in the Rohilkhand tract south-east of Bareilly and extending westward between Badaun and Sambhal up to Ganga, has very few monuments. Similarly, the entire region east of the Ghagra, comprising the districts of Lakhimpur, Bahraich,


ARCHAEOLOGICAL REMAINS
IN UTTAR PRADESH
(16th & 17th Century)
SIZE OF EACH CIRCLE REPRESENTS APPRXIMATALY
THE NUMBER OF REMAINS RECORDED AT EACH SITE
Miles 20 10 0 20 40 60 80 Miles
KM 20 10 0 20 40 60 80 100 KM.
DELHI
AGRA
LUCKNOW
AWADH
ALLAHABAD
Ganga River
Yamuna River
Ganga R.
78°
80°
82°
84°
30°
28°
26°
24°

Ch VI

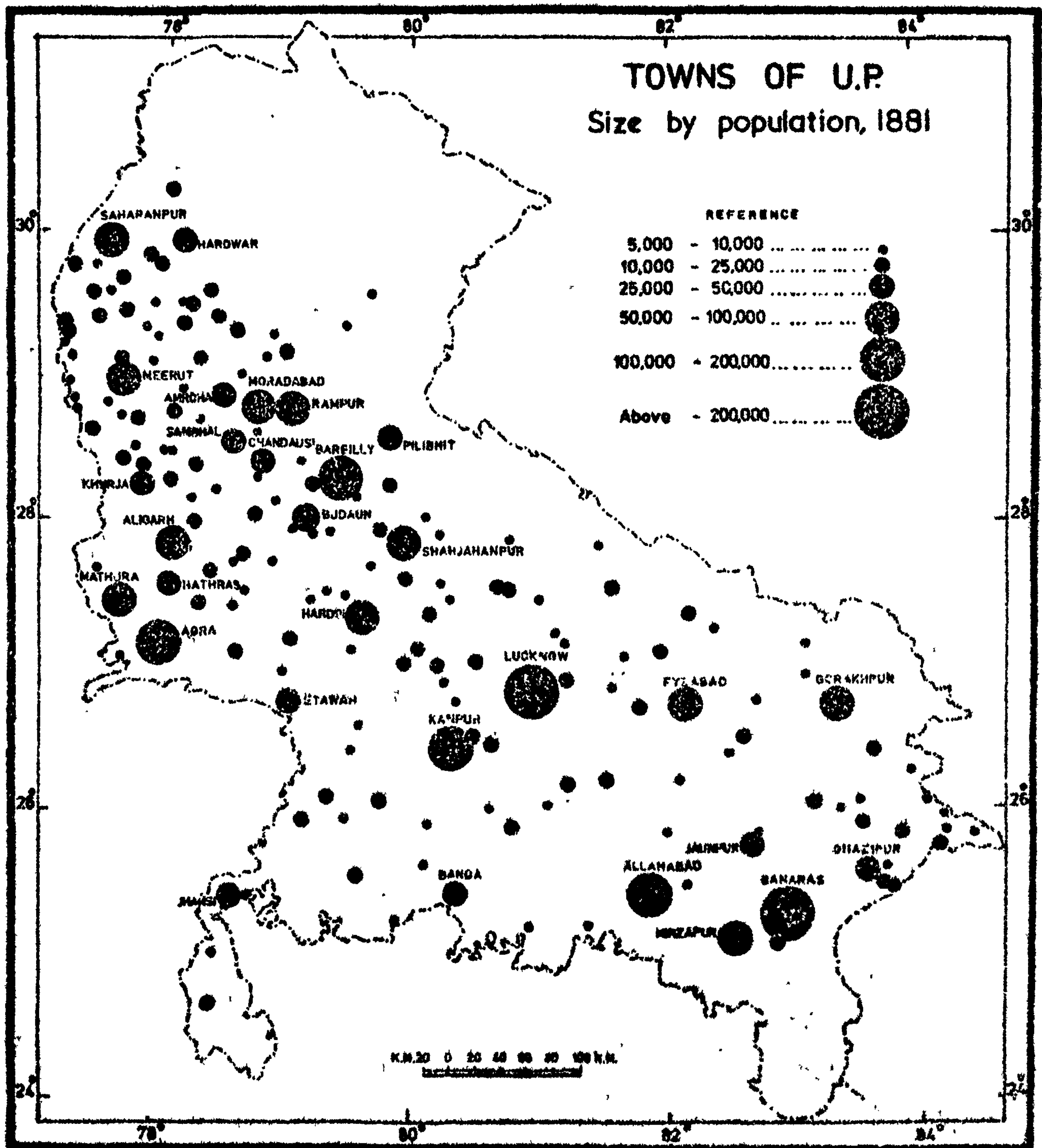
Map V

Gonda, Basti, Gorakhpur and Deoria, has very low suyūrghāl. It has also very few monuments.

On the whole, it would seem that the pattern of suyūrghāl corresponds to a noticeable extent with the pattern of urban distribution indicated by archaeological remains of the 16th and 17th centuries. This, therefore, suggests that the hypothesis of the land grantees being largely a town-based class is not completely untenable.

The opposite possible view that the land-grantees were essentially a rural clas can also be tested by a device entirely based on the Āīn's own evidence. If they were rural in character, it should reasonably follow that they should have been linked to the zamīndār class. One can then legitimately argue that the grant-holders within a locality should have belonged to the same class or community as the zamīndārs. Now since the grant-holders were overwhelmingly (if not entirely) Muslims,[1] this should mean that their suyūrghāl should have been concentrated in parganas which had Muslim zamīndārs. The Āīn, as we have noticed (Chapter I; see also Chapter VI), furnishes a detailed pargana-wise record of zamīndār castes; and we are thus enabled to see from its own tables whether the parganas with high per centage of suyūrghāl

1. Irfan Habib, Agrarian System, p.310.


TOWNS OF U.P.
Size by population, 1881
REFERENCE
5,000 - 10,000
10,000 - 25,000
25,000 - 50,000
50,000 - 100,000
100,000 - 200,000
Above - 200,000
SAHARANPUR
HARDWAR
MEERUT
MORADABAD
RAMPUR
CHANDAUSI
BAREILLY
PILIBHIT
KHURJA
ALIGARH
BUDAUN
SHAHJAHANPUR
MATHURA
HATHRAS
AGRA
LUCKNOW
FYZABAD
GORAKHPUR
ETAWAH
KANPUR
BANDA
ALLAHABAD
BANARAS
MIRZAPUR
GHAZIPUR
78°
80°
82°
84°
30°
28°
26°
24°

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Map III

out of *jamaʿ* are broadly those which have Muslim clans are recorded as *zamīndārs*. This can be done by simply grouping all *parganas* which have Muslims (exclusively or partially) as *zamīndārs*, on one side, and the remainder, on the other, and, then, comparing the *suyūrghāl-jamaʿ* ratio in the first category as a whole, with that in the second.

The following is a comparative table, with the ratios worked out for the *parganas* in both categories at *sūba*-level:

Sūba	Total *suyurghal* as % of total *jamaʿ*	Total *suyūrghāl* of *parganas* where Muslims are entered as *zamīndārs* as % of *jamaʿ*	*Suyūrghāl* of other *parganas* as % of *jamaʿ*
Agra	3.995	4.465	3.887
Delhi	5.843	9.181	5.105
Awadh	4.309	8.762	3.701
Allahabad	5.013	5.335	4.953

It is obvious from the above table that in all the four *sūbas* the proportion of *jamaʿ* alienated through grants is higher for the *parganas* which had Muslim *zamīndārs* than for those which had no Muslim *zamīndārs*.

This tendency emerges also from the figures at sarkār level. In Appendix II, I have set out the figures for various sarkārs. In the ṣūba of Agra in seven sarkārs out of nine having Muslim zamīndārs, the per-centage of suyūrghāl out of jamaʿ is higher for the parganas with Muslim zamīndārs. In Delhi, again, the suyūrghāl, as per cent of jamaʿ, is higher in parganas with Muslim zamīndārs in six out of seven sarkārs. In Awadh only three out of five sarkārs have Muslim zamīndārs recorded against their parganas. In all the three sarkārs the per-centage of suyūrghāl out of jamaʿ is, again, higher in parganas with Muslim zamīndārs than in others. The corresponding figures for the sarkārs in ṣūba Allahabad are, however, only four out of seven.

Another set of figures can be used to demonstrate the same tendency. We can set off the per-centage of suyūrghāl in parganas with Muslim zamīndārs out of the total suyūrghāl of each ṣūba, against the per-centage of the jamaʿ of the same parganas out of the total jamaʿ of the ṣūba.

Ṣūba	Suyūrghāl in parganas with Muslim zamīndārs as % of the total suyūrghāl of the ṣūba	Jamaʿ of parganas with Muslim zamīndārs as % of total jamaʿ of the ṣūba
Agra	20.83	18.63
Delhi	28.43	18.10
Awadh	24.33	11.96
Allahabad	17.50	16.65

Parganas with Muslim *zamīndārs* thus consistently account for a larger proportion of the total *suyūrghāl* within each *ṣūba* than of the *jamaʿ* of the *ṣūba*. In other words, Muslim *zamīndārs* appear to have attracted land-grantees to a recognisably greater degree than non-Muslim *zamīndārs*. The difference is, however, not by any means dramatically large.

From this one might deduce that the sites of the grants were affected by the composition of *zamīndārs*. But it may not necessarily mean much more than that the land-grantees being Muslims, sought grants in *parganas* with Muslim *zamīndārs*. It does not necessarily imply that the grantees were of the same clans as Muslim *zamīndārs*. Indeed the fact remains that an overwhelmingly large proportion of *suyūrghāl*, ranging from 71.57% in *ṣūba* Delhi to 82.50% in *ṣūba* Allahabad lay in *parganas* without any recorded Muslim *zamīndārs*.

Furthermore, in certain *sarkārs* a situation opposite to the general tendency is also discernible. In *sarkār* Sirhind, which has a high *suyūrghāl* relative to *jamaʿ* (8.34%), the per centage of *suyūrghāl* out of *jamaʿ* in *parganas* with Muslim *zamīndārs* is substantially lower (5.42%) than in *parganas* without Muslim *zamīndārs* (see Appendix III).[1]

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1. I have classified the Ranghar caste among non-Muslims, on the strength of Jalaluddin Thanesari's statements in his *Risāla dar bai Ārāzī*, written in Akbar's reign (MS Maulana Azad Library, Shaitta Coll. Fiqh Arbiya, 24/26, f.10b). But present tradition (Cf. Ibbetson, *Panjab Castes*, Lahore, 1916, p.139; Elliot, *Memoirs of the Races of North-Western Provinces & c* ed., J. Beams (London, 1869, I, p.47), declares them to be Rajputs converted to Islam. It would

(contd)....

In a number of *parganas*, in the *ṣūba* of Allahabad Brahmans are entered as *zamīndārs* (with no Muslim clan recorded along side them). Yet the per-centage of *suyurghal* out of the *jamaʿ* is usually higher in those *parganas* than in others. Within *sarkār* Karra, for example, in *parganas* with Brahman *zamīndārs*, the per-centage of *suyūrghāl* out of the *jamaʿ* ranges from 8.63 to 13.42, as against the general *sarkār* per-centage of 6.50.

Thus in spite of a correlation between higher *suyūrghāl* and Muslim *zamīndārs* at *pargana* level, it is still not probable that the grantees were of the same clans as the *zamīndārs*, and, therefore, of rural origins. At best what can be said is that Muslim grantees showed a marginal preference for localities having Muslim *zamīndārs*. Our main thesis that the grantees were largely of an urban origin, or at least lived in proximity to urban centres, would thus remain largely unaffected.

(continued....)

seem more reasonable to rely on contemporary authority than on later tradition. But if we suppose the Ranghars to have been Muslims the per-centage of *suyūrghāl* out of *jamaʿ* in *parganas* with Muslim *zamīndārs* in *sarkar* Sirhind would come to 8.51. Conversely, the per-centage of *suyūrghāl* in *parganas* with non-Muslim *zamīndārs* would decline to 8.21. In this case, then *sarkār* Sirhind would not offer an exception to the general rule.

Appendix A

CONCEALED ROUNDING OF NET JAMÁ FIGURES IN THE AIN-I AKBARI

Sūba Agra

Pargana	Jama'	Suyūrghāl	Jama' less Suyūrghāl
Sarkār Agra			
Udai	28,84,365	78,165	28,06,200
Bhosawar	55,05,460	2,55,460	52,50,000
Wazirpur	20,09,255	9,255	20,00,000
Sarkār Kalpi			
Rath	92,70,894	2,70,894	90,00,000
Sarkār Kanauj			
Patti Nakhat	5,66,997	10,497	5,56,500
Chabramau	15,22,128	22,128	15,00,000
Sarkār Kol			
Atrauli	54,54,459	54,459	54,00,000
Tappal	18,02,571	2,571	18,00,000
Sarkār Erach			
Khaksis	13,43,073	7,673	13,35,400
Sarkār Alwar			
Baroda Fateh Khan	2,01,059	1,059	2,00,000
Sarkār Sahar			
Bhadauli	4,41,840	6,840	4,35,000
Nonera	6,18,115	17,515	6,00,600

Sūba Delhi

Sarkār Delhi			
Jhinjhinah	17,00,250	1,00,250	16,00,000
Jalalpur Sarot	10,01,875	1,775	10,00,100
Meerut	49,91,996	3,41,096	46,50,900
Sarkār Sambhal			
Islampur Dargu	4,29,375	675	4,28,700
Bachhraon	8,28,322	3,632	8,24,700
Kundarki	6,74,936	74,936	6,00,000
Gunnaur	2,67,919	17,919	2,50,000
Sarkār Saharanpur			
Bidauli	31,15,125	1,40,025	29,75,100
Chhartawal	16,68,882	68,882	16,00,000
Rampur	17,78,597	78,597	17,00,000
Rurke	16,28,861	8,861	16,20,000
Sikri Bukhari	33,10,615	1,10,615	32,00,000
Sarsawa	25,16,165	16,165	25,00,000
Sambhalera	10,11,078	11,078	10,00,000
Sarkār Rewari			
Kot Kasim Ali	33,57,930	1,10,330	32,47,600
Sarkār Hissar Firuza			
Jamalpur	42,87,461	87,461	42,00,000
Sarkār Sirhind			
Dahot	16,01,346	1,646	15,99,700
Deorana	5,80,985	17,385	5,63,600
Sunam	70,07,696	7,696	70,00,000
Ludhiyana	22,94,633	44,633	22,50,000
Machhiwara	6,53,552	28,552	6,25,000

Sūba Awadh

Sarkār Awadh			
Satrikh	11,26,295	92,695	10,33,600

Sarkār Khairabad

Basara	2,76,066	4,566	2,71,500
Kheri	32,50,522	50,522	32,00,000
Laharpur	30,29,479	2,09,079	28,20,400
Nimkhar	35,66,055	66,055	35,00,000

Sarkār Lucknow

Sarausi	12,39,767	1,567	12,38,200
Fatahpur	31,61,440	2,61,440	29,00,000
Kakori	14,34,430	1,34,430	13,00,000

Sūba Allahabad

Sarkār Allahabad

Saraon	32,47,127	1,61,527	30,85,000

Sarkār Ghazipur

Sarkār Total	1,34,31,325	1,31,825	1,32,99,500

Sarkār Kalinjar

Mandaha	29,98,062	1,54,062	28,44,000

Sūba Lahore

Sarkār Bait Jalandhar

Miyani Nuriya	21,06,156	6,156	21,00,000
Hadiabad	5,19,467	2,067	5,17,400

Sarkār Bari Doab

Bholra	24,13,268	13,268	24,00,000
Paithan	72,97,015	97,015	72,00,000
Khokharwal	34,75,510	3,510	34,72,000

Sarkār Rachnow Doab

Hafizabad	45,48,000	48,000	45,00,000
Mahrur	30,05,602	6,602	29,99,000

Sarkār Chhant Doab

Gujrat	82,66,150	66,250	81,99,900
Hazara	46,89,136	2,19,536	46,69,600

Sarkār Sindh Sagar Doab

Nandanpur	24,110	4,110	20,000
Hazara Qaralaugh	18,05,342	5,342	18,00,000

Sūba Multan

Sarkār Dipalpur

Baba Bhoj	20,20,256	20,256	20,00,000
Jhain	12,00,600	600	12,00,000
Firuzpur	1,14,79,404	1,99,404	1,12,80,000

Sarkār Bhakkar

Alore	11,32,150	20,550	11,11,600

Sūba Ajmer

Sarkār Ajmer

Harsor	12,00,926	926	12,00,000

Sarkār Chittor

Phulia	28,49,470	43,470	28,06,000

Sarkār Ranthambhor

Delwara	4,09,260	9,260	4,00,000
Kankhara	11,11,994	11,994	11,00,000

Sarkār Nagor

Bhundana	12,71,960	70,460	12,01,500

Sūba Malwa

Sarkār Ujjain

Budhnawar	30,56,195	1,095	30,55,100
Ashta	30,00,790	790	30,00,000
Karhli	74,47,906	80,506	73,67,400

Sūba Gujrat

Sarkār Patan

Patan	9,57,462	1,43,862	8,13,600
Bijapur	60,01,832	2,832	59,99,000

Sūba Bihar

Biswak	27,06,530	1,70,630	25,35,900
Phulwari	18,560	9,41,160	9,22,600

Rounding Resulting from Addition of Suyūrghāl to Jamaʿ

Sūba Agra

Sarkār Kol

Chandaus	17,49,238	36,662	17,76,900

Sūba Allahabad

Jais	14,24,737	2,77,863	17,02,600

Appendix B

SUYŪRGHĀL AS PER CENT OF JAMAʿ

Sarkār	All Parganas	Parganas with Muslim zamindārs	Other Parganas
Sūba Agra	3.995	4.465	3.887
Agra	7.631	5.638	7.843
Kalpi	2.135	2.619	1.810
Kanauj	2.284	5.980	1.812
Kol	3.772	16.962	2.811
Gwalior	0.586	-	0.586
Erach	1.196	3.972	0.196
Payanwan	0.977	-	0.977
Narwar	2.268	-	2.268
Mandlaer	0.000	-	0.000
Alwar	1.543	2.788	0.083
Tijara	4.065	4.183	0.286
Narnaul	1.519	0.930	1.720
Sahar	1.984	2.096	1.962

<u>Sūba</u> Delhi	5.843	9.181[1]	5.105[1]
Delhi	8.879	16.257	6.581
Badaun	1.314	3.919	0.616
Sambhal	4.443	14.238	3.034
Saharanpur	5.653	6.634	5.313
Rewari	2.565	5.229	0.737
Hissar Firuza	2.677	4.509[2]	2.406[2]
Sirhind	8.339	5.415[2]	9.069[2]
Kumayun	0.000	-	-
<u>Sūba</u> Awadh	4.306	8.762	3.701
Awadh	4.684	6.894	4.677
Gorakhpur	0.430	0.496	0.420
Bahraich	1.934	-	1.934
Khairabad	3.837	-	3.837
Lucknow	5.673	9.896	4.497
<u>Sūba</u> Allahabad	5.015	5.335	4.953
Allahabad	6.482	3.972	6.708
Ghazipur	0.887	-	0.887
Benaras	3.816	-	3.816
Jaunpur	5.446	10.715	4.388
Manikpur	7. 18	9.490	6.909
Chunar	1.879	1.016	2.020
Kalinjar	3.497	2.428	3.623
Kora	2.698	4.505	2.305
Karra	6.489	7.134	6.416

1. Counting the Ranghars as Muslims, the figures for the <u>sūba</u> in the last two columns would be 9.708% and 4.619%.

2. Counting the Ranghars as Muslims, the figures in the last two columns would be 8.512% and 8.213%.

Appendix C

JAMAʿ AND SUYŪRGHĀL IN PARGANAS WITH MUSLIM ZAMINDĀRS

	Jamaʿ of parganas with Muslim zamindārs as per cent of Total Jamaʿ	Suyūrghāl in parganas with Muslim zamindārs as per cent of Total Suyūrghāl
Sūba Agra		
Agra	8.693	6.408
Kalpi	40.195	49.311
Kanauj	11.322	29.645
Kol	6.789	30.530
Erach	6.638	22.046
Alwar	53.967	97.523
Tijara	96.967	99.787
Narnaul	25.486	15.609
Sahar	16.206	17.126
Sūba Delhi		
Delhi	24.149	44.209
Badaun	21.148	62.992
Sambhal	12.581	40.313
Saharanpur	25.742	30.208
Rewari	3.423	6.979
Hissar Firuza	12.884	21.705
Sirhind	19.990[1]	12.082[1]
Sūba Awadh		
Awadh	12.518	18.424
Gorakhpur	11.717	13.536
Lucknow	21.778	37.991
Sūba Allahabad		
Allahabad	8.256	5.059
Jaunpur	16.723	32.904
Manikpur	10.694	14.126
Chunar	14.337	7.763
Kalinjar	10.512	7.299
Kora	17.856	29.815
Karra	10.154	11.164

1. Counting the Ranghars as Muslims, the per centages of jamaʿ and suyūrghāl of parganas with Muslim zamindārs for the sarkār of Sirhind would be 42.122 and 42.996; and for the sūba of Delhi 24.059 and 39.970.

Chapter VII

THE ZAMĪNDARS' SHARE IN THE SURPLUS

The position of zamīndārs in Mughal India has attracted the attention of many scholars. Attempts have been made to analyse their rights, functions and role in the agrarian economy.[1] Though practically present throughout the Mughal Empire,[2] the zamīndārs are recognised to have been socially quite heretogeneous; their rights, as well as obligations must have varied a great deal according to localities. In the 'directly' administered areas, they were a major support of the Mughal land-revenue machinery, while in other regions, they were little more than tribute-payers and collected the land-tax from the peasantry mainly for their own coffers.

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1. Irfan Habin, Agrarian System; 'Potentialities of Capitalistic Development in the Economy of Mughal India', Enquiry, N.S. Vol. III, No.3, 1971; S. Nurul Hasan, 'Zamindars under the Mughals', in Land Control & Social Structure in Indian History, ed. R.E. Frykenberg, London, 1969; B.R. Grover, 'Nature of Land Rights in Mughal Indian History', IESHR, Vol. I, P. I, 1963-4; A.R. Khan, Chieftains in the Mughal Empire during the Reign of Akbar, Simla, 1977.

2. Irfan Habib, 'Zamindars in the Āin-i Akbarī, Proceedings of Indian History Congress, 1958, pp.320-23.

The wide difference between the land-revenue claim, represented by the revenue-rates (dasturs) and the estimated net realization (jama)[1] of the Mughal ruling class suggests that it was unable to collect a large part of the surplus claimed by it and much of this part could therefore well have been appropriated by the zamindar class.

The crucial question is the size of the zamindars' share that filled, partly or mainly, the gap between the revenue claimed by the Mughal government and the amount that it was able to realize in the net. A second question to ask would be about the variations in the share of zamindars in the various regions. No information about the size of the zamindars' share in revenue is forthcoming from any source belonging to the 16th or early 17th century. The Ain-i Akbari does not provide us with any direct statement on this matter, except once where it might possibly be referring to a zamindar, though the likelihood is much greater that the reference is to a village headman. The rais-i deh (lit. village-chief) was to be allowed to have 1/40th of the land, revenue-free, after the full revenue had been collected owing to his endeavours.[2] This 2½%

1. See Chapter V.

2. Ain, I, p.285.

allowance could hardly be the one paid to the zamindār in satisfaction of his claims by virtue of his prescriptive right. It could better represent the headman's or muqaddam's share in the allowance known as dah-nimi-i (o) muqaddami, (a '5 %' allowance), mentioned in madad-i ma'āsh documents.[1] While exempted from making this payment, the madad-i ma'āsh holders had still to pay the haqq-i milkiyat, or the malik/zamīndārs' claims on the land.[2] This makes it still more definite that the zamīndārs' intrinsic claim was distinct from the headman's allowance of 2½% (or 5%), which was dependent upon his actual performance in collecting the revenue. What the zamīndār collected from thepeasants or took as his share out of the land-revenue is thus left unstated in the Āīn-i Akbarī.

Eighteenth century sources contain statements to the effect that the zamīndārs' claim (mālikāna) could be compounded at just 10% of the land-revenue[3] (but 25% in Gujarat),[4] when he abandoned his role in the collection of revenue. This together with the nankār, or allowance for service in

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1. Irfan Habib, Agrarian System, p.131 & n.
2. Ibid., p.143.
3. Yasin's Glossary, Br. Mus. Add. 6603, f.79a.
4. This is, however, true only for zamīndārī lands. (Mirāt-i Ahmadi, I, pp.173-4). See also below.

collecting the land-revenue, which is set in these sources at 5 to 10%, would suggest an absolute minimum of 15 to 20% of land-revenue for the *zamīndārs*' gross income in Northern India (and 30 to 35% in Gujarat). But it is not certain (a) whether these standards applied to the earlier (16th and 17th) centuries as well; (b) how far was the actual income of the *zamīndārs* higher than these standards in different localities; and (c) what factors caused those variations.

One kind of evidence from the earlier two centuries, viz., the ratio between the prices of *zamīndārī* and actual land-revenue would suggest that the *zamindar* expected his own net income (let alone gross income) to be much more than 15% of the revenue in Northern India. The *zamīndārī* prices in a locality of *sarkār* Bahraich in the province of Awadh during Aurangzeb's reign work out at about 228% of the avera annual land-revenue.[1] If the purchaser expects a full return of the investment within as many as ten years, his *net* income should have been 23% of the land-revenue. The *gross* income should have been much higher. Even if the expectation was that the investment would be recovered wi 15 years the *net* income should have been 15% per year. fact, with the average rate of interest in commerce hoveri

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1. Cf. Irfan Habib, *Agrarian System*, pp.152-3, where, howe the distinction between net and gross income of the *zam* is rather surprisingly overlooked.

around 1% per month (= 12% p.a.) if not more,[1] one would rather think that, the zamindārs must have invested for a return of capital within 10 years rather than 15. The revenue:price ratio in another document from Shamshabad (Uttar Pradesh), belonging to 1530, is almost identical,[2] indicating accordingly, a similar size of the zamindārs' net income compared to land-revenue. Rather late documents (1772), again from Awadh, offer still more explicit evidence in that they show the right to land-revenue as having a sale-value of Rs.15, while the zamīndārī right for the same land had a value of Rs.6.[3] This would suggest that the ratio of zamīndārī net income to land-revenue here was a high as 40:100.

While the above evidence enables us to have some notion of the net income of the zamīndār for determining the zamīndārs' share in the peasant's surplus, what is of relevance is not so much the zamīndārs' net income but his gross-revenue, i.e. not what he retained after meeting the expenses (on his retainers, fort, etc.) necessary for the collection of his

1. Irfan Habib, 'Usury in Medieval India', Comparative Studies in Society and History, Vol. VI, No.4, 1964, p.397.

2. Irfan Habib, 'Aspects of Agrarian Relations and Economy in a Region of U.P. during the 16th century', IESHR, Vol. IV, No.3 (1967).

3. Allahabad documents, 355, 439 and 457. I am thankful to Mr Zaheer H. Jafri for drawing my attention to this evidence.

share from land-revenue, as well for his own imposts, perquisites, customary claims, etc., but the total amount from the peasants obtained by all these means.

One can hazard an estimate of the magnitude of the zamīndārs' share, if with an estimate of the zamīndārs' net income, we could also frame an estimate of zamīndārs' expenditure on the retainers and other items.

Now Abul Fazl in his statistics for 'the Twelve Provinces',[1] provides us with detailed information on the castes and retainers (sawār (cavalry), piyāda (infantry), elephants, guns and boats) of zamīndārs. The information on castes has already been subjected to some analysis.[2] But the possibilities of utilising the information on zamīndārs' retainers must also be explored. It would seem that if from the number of retainers one should be able to make an estimate of the zamīndārs' military expenditure, one can establish a minimum level for the total income of the zamīndārs in different areas.

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1. Āīn, I, ed. pp.303-595.

2. B.S. Cohn, 'Structural Changes in Rural Society', Land Control and Social Structure in Indian History, ed. R.E. Frykenberg, London, 1969; K.K. Trivedi, 'Changes in caste-composition of the zamindar class in Western Uttar Pradesh, 1595- circa-1900', IHR, Vol. II, No.1, 1975, pp.47-6.

Abul Fazl puts the total strength of the zamindārs' troops at more than 44,00,000[1] for the whole Empire, and sets out figures for the provinces and their divisions and sub-divisions in his statistical tables of the 'Account of the Twelve Provinces'.[2] In the textual portion preceding the statistics of each province, he states the total number of zamindārs' horsemen and infantry, predacing the number by the word bumi. By way of exception, for two provinces, namely, Berar and Dandesh (Khandesh), the number of zamindārs' retainers for the province are not stated. In the statistical table of Berar, however, sawārs and piyādas are entered against some of the parganas of sarkārs Punar, Kherla and Basim; but the sarkār totals even in such cases are not given. In Khandesh no entry is made at any level.

In the remaining provinces the Mughal administration seems to have collected fairly detailed information about the size of the zamindārs' armed followers. Excepting Bengal, Bihar and Ajmer, details are given against parganas in most sarkārs of the provinces. Pargana-level statistics are given in the Āin for all the sarkars of Awadh, Lahore, Multan and Kabul. In the Allahabad, sarkār Battha Ghora has no pargana

1. Āin, I, p.175.

2. Ibid., pp.303-494.

details and in *sarkār* Chunar the entire cavalry and foot are ascribed to one *pargana*, namely, Chunar *bā havelī*. But otherwise full *pargana*-details are provided. In Delhi only the outlying *sarkār* of Kumaum has no *pargana* figures for the *zamīndārs'* troops. Out of the 13 *sarkārs* of Agra, only under two, viz., Narwar and Mandlaer, are *pargana* entries not recorded. In Gujarat *sarkār* Nadaut has no entries for the retainers, while under Surat, Godhra and Saurath the information does not go beyond *sarkār* totals; all other *sarkārs* have *pargana* details. In the province of Orissa all the *sarkārs* except the Raj Mahendra (not yet subjugated) have *pargana* details. For the province of Malwa detailed statistics are provided under all the *sarkārs*, except for the *sarkārs* of Nadarbar and Gagron, under which neither the castes of *zamīndārs* nor the number of their retainers is recorded. For *sarkār* Mandu and Handia the Mughal administration does not seem to have collected information for *zamīndārs'* castes, since the provincial tables have the *pargana* spaces for *zamīndār* castes; and at the *sarkār*-level, the vague entry, "Various Castes" (*aqwām-i mukhtalif*) is resorted to. In the province of Bihar and Ajmer, only the *sarkārs* of Bihar and Sirohi, respectively, have *pargana*-entries.

It would seem, then, that, in general, Akbar's administration usually failed to obtain detailed statistics

only from areas having tributary[1] or recalcitrant zamīndārs. Otherwise, full particulars were collected, with just a small number of exceptions.

Further, the data provided suggest that the census, where it was enforced, demanded severe exactitude. The figures for elephants seem exact and are rarely in the round, even if we take endings in 5 (five) as round figures; cavalry too is not always given in round numbers and we get many detailed figures. For infantry, on the other hand, the figure is always round, except once, viz., 56 piyādas for pargana Niman of sarkār Handia in Malwa. There is no sarkār-wise break-up for cannon (Bengal) and boats (Bengal and Bihar).

All this establishes that the figures were not rough estimates, but that local officials like qānūngos or chaudhuris, and, possibly the zamīndārs themselves, were made to furnish the information about their retainers. It further suggests that the maintenance of retainers, if not an obligation on part of the zamīndārs, was at least a well established right, recognised by the Mughal administration.

The data on retainers can be used for making at least a rough estimate of the zamīndārs' minimum 'necessary'

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1. S. Nurul Hasan, 'Zamindars under the Mughals', op. cit., p.18.

expenditure, if one could estimate the average expenditure on a sawār and a piyāda. Though immense variety must have existed in the matter of payments by individual zamīndārs to individual retainers, it is possible that some customary standards prevailed in different localities. The Āin has no information on this, and it is difficult to trace anything shedding light on it in other sources. Abul Fazl, however, sets out the amounts that the Imperial exchequer sanctioned for different breeds of horses and elephants, as well as salary paid to different types of troopers. The figures are always given with detailed break-up of costs of fodders, equipment, etc.[1] It cannot naturally be assumed that the zamīndārs paid their retainers at the same rates; but these data offer a basis for making some minimum estimates for zamīndārs' expenditure on a horseman and an elephant.

The amount sanctioned for the most inferior horse (jangla) was 240 dāms per month. This included the allowance for grass, ghī, etc. It could be assumed that the zamīndārs paid their retainers only for the bare essentials. Adding the amounts under the heads which were essential, viz.,

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1. Āīn, I, pp.177-8, 188. See Chapter

2. Akbar's administration, making a provision of the horses of revenue-survey officials, allowed just 6 sers of grain-fodder (dāna) per horse per day, it being rated at 12 dāms per man (Todar Mal's Memorandum, original text in Akbarnāma, Br. Mus. Add. 27247, ff.331-2b, and Abul Fazl's polished version in ibid., Bib. Ind., II, pp.381-3). I have, however, allowed 5 sers of dāna retaining the price of 12 dāms per man, for expenditure on the zamīndārs' horse. The Āin allows 5 sers to the jangla horse per day.

grain-fodder (dāna), 45 dāms; saddle (zīn-o-lajām), 10 dāms, shoeing (nāl) 2 dāms, groom (sāis), 45 dāms; we get 102 dāms per month, i.e. 1,224 dāms per year. To make an allowance for the difference in payment by the royal exchequer and the zamīndār, I have scaled it down by 20% and have taken 1000 dāms per annum as the minimum limit of expenses on a cavalryman.

The amount sanctioned for the most inferior elephant (phundarkiya) was 300 dāms per month.[1] This covered expenditure on grain and keeper (mahāwat) only; and it seems reasonable to accept it as the zamīndārs' average expenditure on an elephant.

The lowest paid foot-soldier in the Imperial establishment got 240 dāms per month.[2] This amount seems too high to be applicable to the zamīndārs' foot soldiers, and cannot even serve as a basis for striking a rough estimate. The amount paid to the foot soldier is difficult to determine since it seems natural that the zamīndārs in fact maintained only 'part-time' or seasonal retainers. They might not require them all the time and they were probably merely kept in reserve to be called at the hour of necessity. If such was the case, one extreme suggestion could be that service as a

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1. Āin, I, pp.177-8.

2. Ibid., p.188.

foot-soldier was an obligation on the part of the peasants, and therefore, was obtained gratis by the zamindārs. However, this is unlikely, since the relatively small infantry figures cannot possibly represent the total number of able-bodied rural population. If the obligation was imposed on some special clan or caste of the peasantry, the peasants must have been granted some benefits, e.g. lower revenue-rates or revenue exemptions; and this would represent one form of payment. In most cases, perhaps, the zamindārs paid his retainers in cash or (by alienation of revenue) in land. I have taken 100 dāms per annum as the minimum cost of maintaining one foot-soldier. This is a purely arbitrary figure; but it is so low that it is difficult to conceive of a lower rate of payment or expenditure per retainer.

There is one valid objection to this method. We have estimated the cost incurred by the zamīndār on his retainers, horses and elephants by assuming the prices and costs that prevailed in the Imperial Camp (Agra). But we have to scale down the prices and costs uniformly for all regions, whereas in actual circumstances the rural cost levels must have varied very greatly from region to region. One may say with some confidence, for example, that the cost-levels in Gujarat must have been much higher than in Uttar Pradesh, while those in Bengal must have been much lower.[1] It is, therefore, to be

1. Irfan Habib, Agrarian System, pp.71-3.

conceded that our analysis becomes subject to a wider margin of error, as we go further away from the capital cities of Agra and Lahore. The best we can do, however, is to keep this source of possible error always in mind while assessing our results.

The minimum expenditure incurred by the zamīndārs on their retainers (ulūs) is henceforth designated ZE (zamīndārs' expenditure). As per cent of jama' ZE naturally varies considerably from province to province. The margin of variation is appreciably large even for different sarkārs within a province. Indeed, even within a sarkār the proportion of ZE out of jama' for individual parganas varies a great deal.

Taking first the Empire as a whole, we find that in the entire Empire the ZE was about 16% of the total jama'. The province-wise break-up in an ascending order is given below, being based on the sarkār-level data given in the Appendix to this chapter.

Province	ZE as % of jama'[1]
Gujarat	8
Delhi	9
Allahabad	12
Awadh	12
Lahore	17
Bengal	18
Agra	19
Bihar	22
Multan	23
Malwa	32
Ajmer	42

1. To avoid a false impression of precision, I have rounded off the decimal fractions all through.

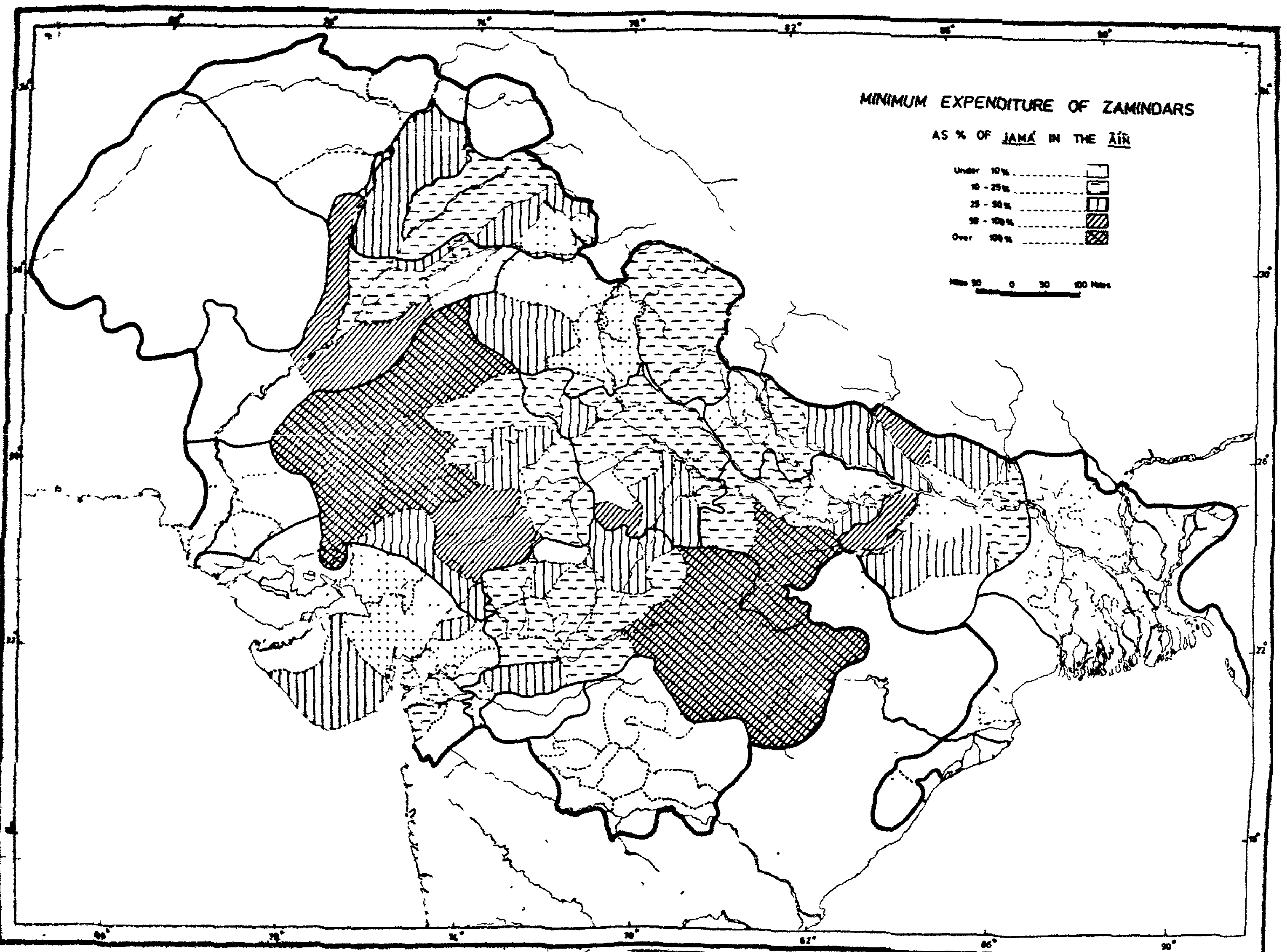
The fact which emerges very strikingly from these figures, is that the minimum amount that the zamindars spent on their retainers accounted for a fairly significant amount relative to the jama' which represented the jagirdars' net income.[1]

It will be seen from the province-wise table, that Agra and Lahore, the provinces that contained the two capital cities, and where the administration might be assumed to have been the strongest and most efficient, ZE reaches 19% and 17% respectively. But the sarkar-wise figures modify this general picture (see Appendix and Map I, which depicts ZE as % of jama' sarkar-wise). The ZE in sarkar Agra was around 10%; but in the adjacent areas of Kol and Kanauj it was above 20% of the jama'. In sarkar Mandlaer, it was 2.4 times of the jama'. In Agra province ZE was not less than 10% of the jama' in any sarkar. In Lahore, in the peripheral area of Bairun Panjnad, ZE was the highest, viz., 36% of jama'. In Bet Jalendhar which has cash revenue-rates and where measurement was almost complete, it was less than 10%.

Sandwiched between the provinces of Lahore and Agra, the province of Delhi presents a different picture, in that here ZE is exceptionally low, being only 9% of the jama'. In

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1. See Chapter V.


MINIMUM EXPENDITURE OF ZAMINDARS
AS % OF JAMA' IN THE ĀĪN
Under 10%
10 - 25%
25 - 50%
50 - 100%
Over 100%
Miles 50 0 50 100 Miles
Faiz Habib

Ch VII

Map I

3 out of 8 sarkārs it was below 10%. Sarkār Delhi itself had the lowest ZE of all (4%). The only sarkār where ZE exceeded 20% was Hissar Firuza.

As one would perhaps expect, the proportion was the highest (42%) in the Ajmer province which consisted largely of the dominions of the Rajput chieftains. In sarkār Bikaner, where the Mughal administration was perhaps least effective, ZE works out at almost 3.6 times of jamaʿ. In Jodhpur too it exceeds the jamaʿ.

The zamīndārs' expenditure was, surprisingly enough, lowest (8% of jamaʿ) in Gujarat though it has been held that there the zamīndārs appropriated 25% of the revenue.[1] Here in most of the sarkārs (6 out of 9) the ZE is much below 10% of the jamaʿ. In Godhra and Saurath (Saurashtra) which had a large area under the chieftains, ZE reaches a higher per centage, 44 and 33, respectively. The low ZE may partly be explained by the fact that the price-level was higher in Gujarat than Agra, so that we should allow for a higher factor in order to obtain the minimum expenditure incurred by zamīndārs. But even a doubling of ZE in Gujarat would only put it at 16% of the jamaʿ. Perhaps a much better explanation is that the zamīndārs' nominal share of 25% came only out of

1. Irfan Habib, 'Social Distribution of Landed Property in Pre-British India', Enquiry, NS, II, 3, p.68.

zamindārī lands; and that in the large *raiyatī* tracts, the *zamīndār* was not allowed such a high allowance.[1]

The other province which is known to have been under powerful *zamīndārs* was Bengal; but here again the ZE does not appear to be very high and amounts to about 18% of the *jama'*. In 7 *sarkārs* out of its total of 19 it is below 10% and only in 6 *sarkārs* does it exceed 20% of the *jama'*. The maximum attained is, however, 87% (Silhat), while the minimum is as low as 2% (Chatgaon). If the cost-levels were especially low in Bengal, the true ZE in Bengal might have been much less than even 18%. But the Mughal conquest of Bengal was still in progress in 1595, and the entire statistics of Bengal are, on that ground, not entirely above suspicion. Certainly for Chatgaon, at least, the *Āin's* information for both *jama'* and ZE must have been either fictitious or inherited from the obsolete records of the Sultans of Bengal.

From the detailed *sarkār*-level figures we can draw certain inferences: The *zamīndārs'* expenditure was generally higher in those regions which were not closely administered or in peripheral areas where the chiefs were allowed a semi-tributary status. This can be seen in the high ZE in the

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1. This is indeed implied in Irfan Habib's own interpretation of the *Mirāt-i Ahmadi*'s passage in the *Agrarian System*, p.112.

following territories.

Sarkār	Sūba	ZE as % of jama'
Bhattha Ghora	Allahabad	138%
Kumaun	Delhi	18%
Garh	Malwa	271%
Bairun Panjnad	Lahore	61%

If progress of measurement could be an index of degree of administrative control, then at least in three provinces, Delhi, Agra and Awadh where the extent of measurement was more or less complete or fairly advanced,[1] there is an inverse relationship between ZE and the extent of measurement. In those sarkārs where jama' per bīgha of ārāzī was closer to jama' per bīgha of map area, ZE is usually low. In Bihar, for example, we find that while the ZE was as low as 3% in the measured parganas of sarkār Bihar, it was as high as 11% in the unmeasured parganas.

But such correlation does not appear to have existed in other provinces where measurement was yet to be completed. In such regions, jama' per bīgha of map-area might serve as an index of the degree of administrative control. This, however, would call for allowance for three factors: (a) extent of cultivation at that time; (b) productivity of the soil; and (c) price-level. Broadly speaking, one can detect a general

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1. See Chapter II.

tendency of low ZE with high J/M (*jama'* divided by map-area). This tendency is most pronounced in the remaining portion of Bihar and, excepting certain *sarkārs*, is present in Lahore, Multan and Gujarat. Malwa and Allahabad, however, do not exhibit such correlation (see Appendix).

On the whole, then, we can say that the size of ZE varied broadly in an inverse ratio to the degree of Mughal administrative control. The one problem, of course, is that here we are assuming uniform cost-levels, and, if this were questioned, it might gravely affect our conclusion.

I have, therefore, attempted a detailed scrutiny of the *pargana*-level statistics in the *Āīn* for the area broadly corresponding to the present state of Uttar Pradesh, where the assumption of a uniform cost-level would cause only marginal deviations from the actual.

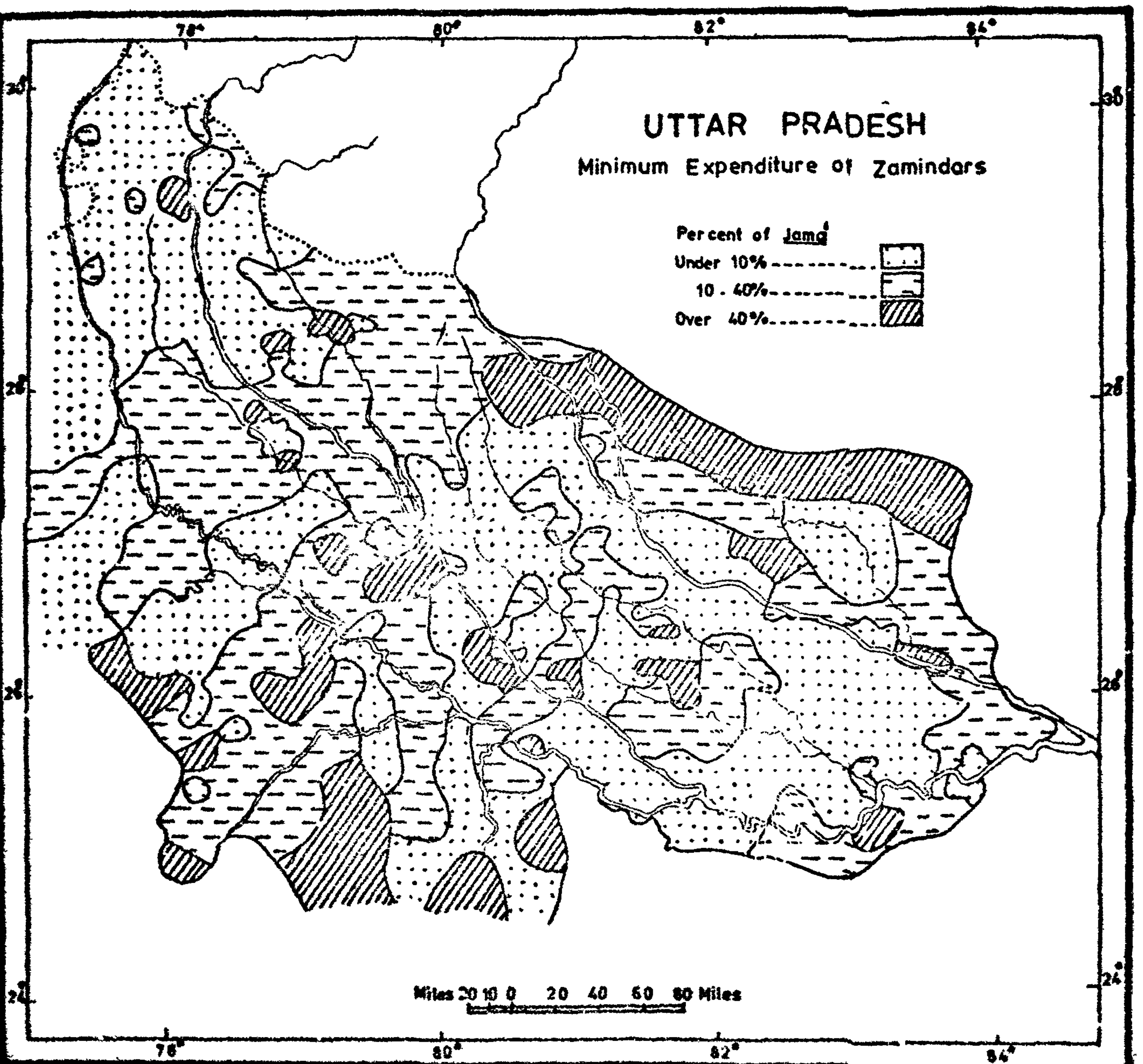
I began by plotting on the map every *pargana* with its ZE as per cent of *jama'*. Then I have grouped the *parganas* into three zones, viz. (a) where ZE is 10% or less of *jama'*; (b) where it is 11 to 40% and (c) where it is over 40% (see Map II).[1] This broadly confirms the result inferred from our *sarkār*-level study of the Empire, namely, that the ZE is higher in the outlying and forest areas. But there appear

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1. The map is based on Sheet 8A of the *Atlas of the Mughal Empire*.

certain pockets with relatively high ZE. One such pocket is south of Lucknow along the Ganga river. Another pocket is situated in Middle Doab (around Agra and Aligarh). In general, in central and western U.P. especially in sarkar Delhi, low ZE is accompanied by a high degree of measurement; but in central Doab, and especially the Allahabad province, low ZE coexists with high J/A (jama' divided by measured land or ārāzi) i.e. with incomplete measurement.

Another interesting feature is that when the parganas with large group like the Rajputs, Brahmans or Muslims as zamīndārs are separately taken into consideration, no correlation with ZE is obtained. But if one takes single castes such as Bachgotis, Bais and, in certain sarkars, Chauhans, among the Rajputs, one finds that relatively high ZE is often assigned to parganas with them as zamīndārs. One is therefore, tempted to infer that even within the closely administered zones ZE varied considerably, and that the zamīndārs' caste-position could have been a factor behind this variation. This leads us to consider a further possibility: The ZE was probably high where the peasant communities were weak, and the land was controlled by small corporate bodies of zamīndārs or muqaddams (e.g. in Middle Doab and Baiswarah); conversely, it was low where peasant communities were strong, e.g. Upper Doab. Can we then infer that the peasant communities were also strong in Eastern Uttar Pradesh (sarkār Jaunpur), where too the ZE is low over an extensive area (see Map II)?


UTTAR PRADESH
Minimum Expenditure of Zamindars
Percent of Jamā
Under 10%
10 - 40%
Over 40%
Miles 20 10 0 20 40 60 80 Miles
78°
80°
82°
84°
30°
28°
26°
24°

Ch VII

Map II

The high range of variations in the _zamindars'_ expenditure, from region to region makes it hazardous to work out any measure of central tendency. However, in most of the _sarkars_ of Agra, Delhi, Lahore, Awadh and Allahabad (where the expenses worked out on the basis of the _Ain's_ standard allowances, seem most applicable), the ZE mostly falls between 10 to 25% of the _jama'_ (in 23 out of 43 _sarkārs_); that is, one can roughly take the average as 17% of the _jama_. This figure inspires respect, since the ZE over the entire Empire amounted to a little over 16% of the _jama'_.

An attempt like this to use the _Ain's_ great census of _zamīndārs_ castes and retainers for the purpose of defining the _zamīndārs'_ share in the surplus extracted from the peasantry must, of course, be pursued with considerable caution. Yet in the absence of any other direct information, the data as worked out by us, appear to be the only means of shedding light on this obscure but important question. We may recall that our mode of calculating the _zamīndārs'_ military expenditure (ZE), is based on such conservative criteria that it must represent the minimum expenditure rather than the normal. Moreover, the _zamīndārs'_ income must have substantially exceeded their military expenditure. Keeping both these considerations in mind, we may assume that the _zamīndārs'_ gross income must have been about double the ZE. If, therefore, the ZE over the entire Empire amounted to a little over 16% of

the *jamaʿ*, the *zamīndārs*' income must have approximated to nearly a third of the *jamaʿ*. We have suggested in chapter V that taking the *jamaʿ* to represent the net income of the *jāgīrdārs* (and *khālisa*) only, we can set the total land-revenue realization (equivalent practically to the agricultural surplus) at 147% of the *jamaʿ*; but in the latter we have allowed 10% for the share of the *zamīndār*. Since this last is precisely the share which is the subject of discussion, let us, for the moment, take (147 - 14.7 =) 132.3% of *jamaʿ* to represent the agricultural surplus (S) less the *zamīndārs*' share (z). If J represent the *jamaʿ*, and z, as we have suggested, was 1/3 J, it is easy to calculate Z in terms of S from the following equation:

$$S - 1/3\ J = 1.323\ J$$

$$\therefore S = (1.323 + 0.333)J$$

$$= 1.656\ J$$

$$\text{or } J = 0.60386\ S$$

(or to put it differently J is 60.386% of S)

Z would be 20.129% S; or in other words the *zamīndārs*' share should have been about one-fifth of the total agricultural surplus.

These very rouch estimates do not negate the general hypothesis that the *zamīndārs*' role in the system of agrarian exploitation was a secondary one, though their share of the

surplus so deduced is much more than what appears to have been hitherto supposed. Moreover, one must remember that averages are deceptive and detailed *pargana*-level scrutiny reveals the existence, right in the middle of strongly administered areas, of pockets where the ZE was exceptionally high and where, therefore, the existence of an economically dominant *zamīndār* class must be assumed. The 'Contours' of *zamīndārī* power that the territorial statistics bring out may, perhaps, open up interesting lines of enquiry both for local historians and for students of economic and social history, with regard to the position, weakness and strength of the *zamīndārs* in each locality.

Appendix

Sarkārs	ZE as % of jama'	Jama'/ārāzī	Jama'/map-area
	Agra		
Mandlaer	241	57	1
Narwar	59	11	3
Erach	35	17	6
Payanwan	34	11	2
Alwar	27	24	14
Kol	23	22	17
Gawalior	23	19	9
Narnaul	22	26	11
Kanauj	22	19	9
Sahar	20	8	6
Tijara	12	24	21
Agra	11	21	20
Kalpi	10	29	16
	Delhi		
Hisar Firuza	26	17	4
Kumaun	18	N.A.	2
Badaun	16	18	3
Rewari	13	26	22
Sambhal	11	16	11
Sirhind	9	21	13
Saharanpur	7	25	24
Delhi	4	17	15
	Awadh		
Gorakhpur	27	49	1
Lucknow	14	24	13
Awadh	11	13	13
Bahraich	11	13	5
Khairabad	9	26	8
	Allahabad		
Batta Ghora	138	N.A.	1
Chunar	40	55	8
Manikpur	19	51	12
Benaras	17	43	13
Ghazipur	14	48	8
Kalinjar	13	47	4
Kora	11	51	12
Jaunpur	8	64	9
Allahabad	7	40	8
Karra	6	41	12

Sarkārs	ZE as % of jama'	Jama'/arāzi	Jama'/map-area
	Bihar		
Champaner	67	64	2
Rohtas	51	86	6
Tirhut	45	81	3
Saran	37	57	4
Bihar (unmeasured)	32	N.A.	1
Munger	24	N.A.	3
Hajipur	4	61	10
Bihar (measured)	3	83	13
	Ajmer		
Bikaner	358	N.A.	6
Jodhpur	138	N.A.	2
Chittor	87	N.A.	6
Ajmer	39	N.A.	1
Sirohi	28	N.A.	4
Nagaur	17	N.A.	3
Ranthambor	13	N.A.	0.1
	Gujarat		
Godhra	44	7	2
Saurath	33	N.A.	4
Surat	14	15	9
Broach	8	23	10
Champaran	6	13	3
Baroda	34	44	32
Ahmadabad	3	38	22
Pattan	2	15	7
Nadaut	N.A.	16	5
	Malwa		
Garh	271	N.A.	0.2
Chanderi	41	56	3
Katri Pirawa	36	46	4
Bijagarh	30	87	5
Mandsor	24	N.A.	2
Raisin	22	83	1
Handiya	16	39	2
Sarangpur	16	54	6
Mandu	10	62	5
Ujjain	10	47	8
Nadurbar	2	58	2
Gagraun	N.A.	71	2

Sarkārs	ZE as % of jama'	Jama'/ārāzī	Jama'/map-area
	Lahore		
Bairun Panjnad	36	N.A.	9
Bari	31	31	19
Sindh Sagar	30	37	2
Chanhat	12	25	10
Rachnao	10	41	14
Bet Jalendhar	8	31	18

THE DISTRIBUTION OF SURPLUS AMONG THE RULING CLASS

Chapter VIII

IMPERIAL FINANCE
- TOTAL INCOME AND ACCUMULATION

I

The Mughal administration, as we have seen, tended to lay claim to practically the whole of the agricultural surplus under the name of land-revenue, though in practice it had to make allowances for the exactions of other right-holders and the cost of revenue collection. Still, after these allowances had been made, it aimed at realizing about 60% of the total claimed land-revenue.[1] Having determined the size of the surplus extracted, we may now turn our attention to the distribution of the surplus among the ruling class, hopefully as part of an attempt at delineating the pattern of distribution of gross national product at the time.

The income of the Empire was represented by the jamaʿ (or in the 17th century terminology, the jamaʿdāmī). To

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1. See Chapters V & VII.

recapitulate our earlier conclusions - the jama' represented the net revenue realization (i.e. gross realization less charges of collection and other allowances left to subordinate right holders). The jama' statistics for the whole Empire are set out along with other data in a chapter entitled Ahwāl-i Doāzdah sūba in Book III of the Āīn.[1] In the body of this chapter which consists of text interspersed with lengthy statistical tables, Abūl Fazl has added material notably the sections on Berar and Khandesh, coming down to the 45th regnal year (1600-1). But his remarks at the beginning of the chapter suggest that his information applied in general to the 40th regnal year (1595-6); and this should, therefore, be taken to be the year of statistics of all the sūbas, apart from Berar and Khandesh.

Abūl Fazl states that the jama'-i dahsāla of the entire Empire amounted to 3,62,97,55,246 dāms.[2] As suggested by Irfan Habib, this figure is probably the total fixed at the conclusion of the Dahsāla experiment, that is in 1584-85.[3] The total jama' of the Empire calculated by us from pargana

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1. Āīn, I, pp.386, 595. See Chapter I.
2. Ibid., I, p.386.
3. I. Habib, Agrarian System, p.399 & n.

figures in the Āin's own statistics comes to 5,10,99,94,137 dāms.[1] But this includes the jama' of Berar and Khandesh which were added to the Empire in the 41st and 45th[3] regnal years.

Since one may expect the share of the mansabdars to be the largest in the expected net income of the Empire, and Abul Fazl expressedly assigns his list of mansabdārs to the 40th R.Y., we should establish, as nearly as possible, what the total jama' of the Empire was in the 40th R.Y. or 1595-96. To obtain the income of the Empire in 1595-96, we should subtract the jama' of Khandesh and Berar from our total of 5,10,99,94,137 dāms. Though Berar was subjugated just after the close of the 40th year, within 1596, the promotions granted to Zain Khān Koka and Sādiq Khān in the beginning of the 41st year,[3] obviously for services rendered in the Berar campaign, are not incorporated in the Āin's list of mansabdārs.[4] The jama' of Berar, therefore, ought to

1. This total differs from the jama' calculated by Irfan Habib, (Agrarian System, p.399) which is based on sūba totals stated in the Āin.

2. Akbarnāma, III, pp.770, 700.

3. Ibid.III, p.770.

4. Āin, I, p.223.

be excluded from any total for the Empire designed for comparison with expenditure estimated on the basis of the Āīn's mansab lists.

The jamaʿ of the Empire (less the jamaʿ of Berar and Khandesh), then, adds up to 4,26,22,09,188 dāms. The total is in broad agreement with the figure of 4,40,06,000 dāms given in the Tabaqat-i Akbarī,[1] which was completed in 1593-4, and which therefore could not have included the two Deccan provinces excluded by us.

In Eastern India certain large tracts whose jamaʿ is formally included in the Āīn under the sūba of Bengal and Orissa had not yet been subjugated.[2] These were:

Sarkār	Bakla	Sūba	Bengal	jamaʿ	71,31,440	dāms
,,	Chatgaon	,,	,,	,,	1,14,23,510	,,
,,	Sonargaon	,,	,,	,,	1,34,16,513	,,
,,	Fatehabad	,,	,,	,,	79,76,837	,,
,,	Bazuha	,,	,,	,,	3,94,66,643	,,
,,	Silhat	,,	,,	,,	70,56,608	,,
,,	Ghoraghat	,,	,,	,,	86,41,941	,,
,,	Rajmahendra	,,	Orissa	,,	50,00,000	,,
,,	Kalingdandpat	,,	,,	,,	55,60,000	,,
			Total		10,56,73,492	,,

1. Tabaqat, III, p.54. The amount is stated in terms of tank-i Murādī, or double dāms, which seems a mistake for dām.

2. Āīn, I, 387, Akbarnāma, III, pp.259, 263, 432-3. One assumes that since Bengal had been formally annexed to the Mughal Empire much earlier, the Tabaqat-i Akbarī's figure for the revenues of the Empire also included these paper-estimates.

Since the Mughal administration could not in fact realize revenue from these *sarkārs*, the *jamaʿ* figures for these too should be deducted from the *jamaʿ*.

The *Āʾīn*'s *jamaʿ* figures included too the revenue alienated in the form of revenue-grants (*suyūrghāl*). Since this amount was not really part of the *jamaʿ* against which *jāgīrs* were assigned, and, as we have shown (Chapter VI), was simply added to the *jamaʿ* figures by Abūl Faẓl, the amounts shown in *suyūrghāl* columns in the *Āʾīn*'s tables must be subtracted from the total *jamaʿ*. The total of *pargana* figures for *suyūrghāl* (excluding *ṣūba* Berar) works out at 10,07,96,474 *dāms*. Subtracting these figures as well, the effective *jamaʿ* of the Empire in 1595-96 works out at 4,05,57,39,222 *dāms*.

The *jamaʿ* comprised land-revenue as well as taxes other than land-revenue,[1] and therefore, represented practically the entire income of the Empire. Yet there were certain other sources of income of the Emperor. These were not covered by the *jamaʿ*. There were the gifts received (and sometimes imposed), the fines and the property received

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1. See infra Chapter V.

in escheat,[1] at least in the case of those nobles who died without leaving hers.[2] There does not appear to be any means of determining the actual size of income so obtained; Monserrate does suggest that it was not inconsiderable.[3] While not adding anything on their account to the total figure of jama' we have arrived at, we shall have to make some allowance for this income while estimating expenditure on various heads and also while discussing the size of the annual savings.

While the major part of the jama' was alienated in the form of territorial revenue assignment (jāgirs) to mansabdārs, the remainder belonged to areas known as khālisa, where the revenue was directly collected by Imperial officials for the Imperial Treasury.[4] Even out of the jama' of the khālisa a portion must have again been claimed by the mansabdārs who were paid their salaries in cash (and who were designated naqdī).[5] The Imperial establishment was financed mainly out of the balance of the khālisa-revenues.

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1. Monserrate, p.207 for gifts and escheat; for fines Āīn, I, pp.163-64.
2. For a detailed discussion of escheat see Athar Ali, Mughal Nobility under Aurangzeb, pp.63-8.
3. Monserrate, op. cit.
4. Irfan Habib, Agrarian System, pp.257, 259.
5. Ibid., p.258.

Keeping in view the division of the jama' under the jāgīr and khālisa, we can fix a minimum limit for the expenses incurred on the salaries of the nobles: Since the jāgīrs were given in lieu of salaries, the portion of the jama' that was under the jāgīr represented the minimum level of the share of revenues alienated to nobles, some of whom, as we have noticed, also received their pay in cash out of the revenues of the khālisa.

Unfortunately the extent of the khālisa, or conversely, that of tho jāgīrs, in the year 1595-6 is difficult to estimate. In his 31st year Akbar remitted one-sixth of the jama' of the khālisa in the provinces of Awadh, Allahabad and Delhi. The remission amounted to 4,05,60,596 dāms.[1] This in turn gives us 24,33,63,576 as the total jama' of the khālisa in the three provinces. The total jama' of these provinces given in the Āīn adds up to 1,10,52,21,823 dāms. The jama' of the khālisa, thereore, should have been about 22.02% of the total jama' within this region. Though it cannot be assumed that the extent of the khālisa in all the provinces was of the same magnitude, the three provinces should give us a fair sample because these exclude, on the

1. Akbarnāma, III, p.494, cf. Irfan Habib, Agrarian System, p.272 & n.

one hand, Agra and Lahore where the extent of the khālisa might be expected to have been larger, and, on the other hand, Bengal, Ajmer and Bihar, where it might be thought to have been smaller.

In the Jesuit accounts, we come across another estimate.[1] It is said that, "For all the kingdoms and provinces which he (Akbar) conquers he holds as his own, appointing his captains ------ over them. From these he takes a third portion of the revenues, the remainder being for their personal needs, and the maintenance of the soldiers, horses, and elephants which each of them is bound to keep." The only meaning this passage will bear is that while jāgirs normally accounted for two-thirds of the jamaʿ, the khālisa amounted to a third. From these statements it would appear that during Akbar's reign the khālisa accounted for anything between 22% and 33% of the total jamaʿ; and the jāgirs, conversely, to between 67 and 78%. This gives a floor of 2,71,73,45,279 dāms for the payment of salaries; and a ceiling of 1,33,83,93,943 dāms for expenses on the Imperial establishment. In the latter case the actual expenses must have been much less because a part of the nobles' pay-claim had to be met in cash out of the khālisa revenues.

1. Akbar and the Jesuits, tr. C.H. Payne, pp.5-6.

For more precise limits and more detailed indications of break-up of the expenditure we have to examine the large amount of data offered by Abul Fazl.

While Abul Fazl deals with revenue resources of the Empire in Book III of the Āin, designated the Āin-i Mukābādi,[1] the first two books namely, the Āin-i Manzilābādi (Camp) and the Āin-i Sipahābādi (Army) give details of the expenditure of the Emperor's own Establishment.

Interestingly enough Abul Fazl includes animal stables, arsenal, army and artillery in the Manzilābādi, along with harem, kitchen, wardrobe and library, while the hunting animals, pigeons, etc., along with slave are put by him under the 'Army'.

While for interpreting certain statements of Abul Fazl, particularly his reference to the total expenditure on the buyutat or Imperial household, we will have to bear Abul Fazl's classification in mind, a more logical division of the Imperial expenditure would be one under three heads, viz., (i) the salary bill of the mansabdārs; (ii) expenditure in the Imperial military establishment; and (iii) expenses of the Imperial household. Our detailed examination in the succeeding chapters will follow this division.

II

Though the channels were numerous through which the revenue collected in the Empire flowed out in the process of distribution, a significant portion of the revenues was excluded from the process and went to form the Imperial hoard. Besides the growing store of the precious stones and ornaments, etc., a separate cash treasury used to be maintained.[1] At Akbar's death, according to the details given by Pelsaert, professedly copied from the royal account books, the cash treasury contained 69,70,000 gold muhrs, 10 crore silver rupees, and 23 crore copper dāms.[2] Pelsaert's figures get some support from Firishta's account of the same hoard. While he does not offer us any tally of gold and copper specie, he does give the number of silver rupees as 10 crores.[3] In addition, he gives the quantities of gold and silver bullion as well as uncoined copper.

Qazwīnī, the first official historian of Shāhjahān, while criticising the extravagence of Jahāngīr, says, however, that Akbar left behind 7 crores of rupees

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1. Āīn, I, p.30.
2. Pelsaert, A Dutch Chronicle, p.33.
3. Firishta, I, p.272.

(excluding, he says, what he left in gold), out of which Jahāngīr spent 6 crores, so that only one crore remained in the treasury at the latter's death.[1] Qazwīnī thus gives a figure for rupees which is much smaller than the one offered by both Pelsaert and Firishta. This seems all the more puzzling since the context was such that it would have suited Qazwīnī's purpose not to underestate the amount left behind by Akbar. Since it is almost impossible to give preference to one over the other figure, I have assumed a range of 7 to 10 crores of rupees for the silver-coin hoard left by Akbar.

For the rest, proceeding on Pelsaert's figures, whose general reliability is discussed in chapters X and XI, the amount in the form of specie, in the Imperial treasury in 1605 can be computed as follows:

muhrs	:	69,70,000	worth	2,50,92,00,000 dāms
rupees	:	7 to 10 crores	,,	2,80,00,00,000 to 4,00,00,00,000 dāms
dāms	:			23,00,00,000
			Total :	5,53,92,00,000 to 6,73,92,00,000 dāms

1. Qazwīnī, Br. Mus. Add. 20734, pp.444-5, Or 173 f.221a-b.

Since in 1605 a *muhr* fetched 9 silver rupees and 40 *dāms* went to a rupee, we have made the conversion of *muhrs* and rupees into *dams* at these rates, and not at those which Pelsaert, taking quotations of his own time, had adopted.

In order to estimate the entire amount 'withdrawn from circulation' we may also add the amount of bullion and uncoined copper recorded by Firishta. While the price of uncoined copper is directly given by Abūl Faẓl as 1044 *dāms* per *man*,[1] the price of gold and silver bullion in terms of *dāms* can also be worked out from the detailed data given in the *Āʾīn*.[2] Assuming the *man* given by Firishta to be the *man-i Akbarī* we may first convert the quantity of gold into grains troy:

$$10 \times 55.32 \times 7000 = 38,72,400 \text{ grain troy.}$$

Since one *muhr* weighed 169 grains,[3] a quantity of 38,72,400 grains of gold would have been equal, weight for weight, to 22,913.6 *muhrs*. But since the seigniorage and minting costs too had to be taken into account (working

1. *Āʾīn*, I, p.31.

2. *Ibid.*, I, pp.31-32.

3. Irfan Habib, 'Currency System of the Mughal Empire', *Medieval India Quarterly*, IV, nos.1-2, p.9.

out at about 5%),[1] the actual number of muhrs minted from 10 man of gold should have been 21,767.93. This at the rate already noted, would be equal to (21,767.93x9x40=) 78,36,455 dāms.

Similarly since a rupee weighed 178 grains troy,[2] 70 mans of silver should have yielded ($\frac{70x55.32x7000}{178}$ =) 1,52,285.39 rupees. The seigniorage and minting costs in the case of silver being 5.6%,[3] the actual amount of rupees minted from this quantity would have been 1,44,061.98, which in turn would be worth 57,62,479 dāms.

According to Abul Fazl one ser of copper yielded 26 dāms and 2½ jītal[4] (i.e. 26.1 dāms). Therefore, 60 mans of copper should have yielded 62,640 dāms.

Adding these amounts to the estimate of cash worked out above, the total value of specie in the Imperial cash treasury in 1605 may be put at between 5,55,28,61,574 and 6,75,28,61,574 dāms.

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1. Irfan Habib, 'Currency System of the Mughal Empire', Medieval India Quarterly, IV, nos.1-2, p.9.
2. Ibid., p.3.
3. Ibid.
4. Āīn, I, p.31. Alternatively, since one man of copper was priced at 1044 dāms the value of 60 mans of copper would have been 62,640 dāms.

The specie so accumulated must have been built up through additions made over the entire reign (1556-1605). It is logical to assume that the size of the annual transfer to the hoard increased in proportion to the extension of the Empire. Since Akbar's effective dominions at the time of his accession at Kalanaur barely comprised the Punjab, the annual savings in the early years could only have been fractions of what they were when the Empire approached its zenith, around the close of the 16th century. Thus, hypothetically, the amount transferred to the hoard must have stepped up every year. Upon the assumption that the hoard Akbar inherited was so small as to be regarded as negligible for all practical purposes, one can postulate a simple annual increase in the savings from zero at the time of the accession, in a regular 'arithmetical progression.

With this assumption, we can determine the amount that went into the hoard in the 40th regnal year, (1595-6), by applying the following formulae:

$$S = \frac{n}{2} [2a_1 + (n-1) d]$$

$$a_i = a_1 + (i-1) d$$

If S denotes total savings
n ,, total number of years
a_i ,, saving in the i th year
d ,, common difference.

Given our two figures for the total value of hoard, the estimates for savings (transfers to hoard) in the 40th R.Y. work out at 18,13,17,920 dāms (accepting Qazwīnī) and 22,05,01,600 dāms (following Pelsaert and Firishta).

A considerable part of this amount must have come from sources not covered by the jamaʿ. The major source of income outside the jamaʿ was war-booty. Large amounts were seized from the treasures of the rulers of conquered provinces.[1] It seems reasonable to believe that a sizeable amount of it would have gone to the Imperial hoards. While the actual size of the contribution of such booty to the hoard cannot be determined, one has arbitrarily to accept some proportion; and I have assumed that out of the total hoard, 10% was gained from this source. One has to make some further allowance for cash presents received regularly on new year's day,[2] on weighing ceremony[3] and numerous other occasions;[4] and also for amounts coming from fines and

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1. Akbarnāma, II, pp.138, 142-3, 214; Tabaqāt, II, pp.152-3, 155; Badauni, II, pp.47-48; Akbarnāma, III, p.296.
2. Akbarnāma (the Takmila), pp.803, 836.
3. Tavernier, I, p.301, one may expect that the tradition continued since Akbar's time.
4. Akbarnāma, II, p.149; Tabaqāt, II, p.155.

escheats. As a minimum, we may take these as contributing one-twentieth of the total savings. Making our deductions accordingly, we may take it that 15,50,26,829 to 18,85,28,870 *dāms* must have been drawn out of the *jama'*-based income, for accretion to the hoard, in the year 1595-96.

We shall now pass on to the different items of 'expenditure'. Chapters IX, X and XI will be wholly devoted to their estimation for the 40th regnal year (1595-96). We will thereafter be able to see whether our estimate for the transfer to the hoard accords with the difference between the total income of the *Khālisa* and the total expenditure estimated by us under the various heads.

Chapter IX

THE SALARY BILL OF THE MANSABDARS

The greatest charge on the jama' (or the total net revenue realization) was represented by the talab or pay-claims of the Imperial civil and military officials - the mansabdārs.[1] The talab of the Mughal mansabdārs was determined by their mansabs (numerical ranks). An understanding of some features of the mansab system is thus necessary before one can attempt an estimate of the total expenses incurred by the Mughal administration in paying the emoluments of the mansabdārs.

It is generally held that from the 18th regnal year of Akbar, the Mughal nobles were assigned numerical ranks (mansabs), consisting of a pair of numbers, the first designated

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1. It is generally held (Moreland, 'Ranks (mansab) in the Mughal State Service', JRAS, London, 1936, p.650; and Abdul Aziz, Mansabdari System and the Mughal Army, London, 1945, pp.147-9) that the recipient of high ranks (under Akbar 500, and under Shahjahan 1,000) were designated umarā' while the word mansabdār was used for those holding lower ranks (below 500 or 1,000). However, Abul Fazl (Akbarnāma, III, 671; Āīn, I, pp.187, 188, 190) and Mutamad Khan (Iqbālnama, II, p.288) use the term mansabdār for all rank-holders without any distinction. It is, however, true that the word umarā' to judge from the Tabaqāt-i Akbari, p.456, was reserved (under Akbar) to those holding mansabs exceeding 500.

zāt and the second sawār.[1] However, before the 40th regnal year of Akbar (1595) we have no actual reference to the paired ranks, and in the two lists of Akbar's nobles, prepared before 1595, only a single rank is recorded.[2] The existence of two ranks before the 40th regnal year thus becomes rather suspect. This impression is reinforced by the fact that the text of the Āʾīn-i Akbarī seems to speak of only a single rank; and neither the term zāt nor sawār is unambiguously employed in the sense of either of the two ranks. Since the Āʾīn-i Akbarī's text mainly pertains to the 40th regnal year (1595-6), the existence of the paired ranks, prior to this date, cannot legitimately be taken for granted.

According to Abul Fazl, it was in the 18th regnal year (1573-4), that the dāgh was introduced and the ranks of the Imperial officials were fixed.[3] These innovations were actually put into effect during the next year (1574-5).[4]

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1. A.J. Qaisar, 'Note on the date of Institution of Mansab under Akbar', Proc. I.H.C., 24th Session, 1961, pp.155-7. By oversight, 1573-4 has been styled by him as the 20th R.Y. instead of the 18th. See also M. Athar Ali, Mughal Nobility under Aurangzeb, Bombay, 1966, p.39.

2. Āʾīn, I, pp.222-32; Tabaqat, II, pp.425-56.

3. Akbarnāma, III, p.69.

4. Ibid., III, p.117.

Muʿtamad Khān giving the details of the measure says:

"......The mansabs were fixed according to the capacity for maintaining and organising a contingent...... Mansabs from dehbashi (10) to panjhazari (5,000) were established and the salary for each was fixed. A regulation to the effect that the mansabdars would separately bring their personal horses and elephants for branding (dagh) was imposed. A trooper, if capable of being a sih-aspa (horseman 'with three horses'), would bring three horses; if capable of being a do-aspa ('with two horses'), two horses; and if capable of a yak-aspa ('with one horse'), he should bring one horse for the dagh. In this way the pay (ʿalufa) for everyone was fixed."[1]

Thus, in addition to making no suggestion that there were two (zat and sawar) ranks, Mutamad Khan indicates that the single rank he is referring to represented the size of the contingents maintained by the mansabdars. He is, of course, writing after Akbar's death; but contemporaries are no less explicit. Badauni relates the mansabs directly to the number of mansabdars' troopers (tabinan) in a striking passage.[2]

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1. Iqbalnama, II, p.283.
2. Badauni, II, p.190.

Most important of all, Abul Fazl, not only says that the mansabs were fixed on the basis of the capacity for organising (sar-kardan) a contingent,[1] but elsewhere makes it plain that the number of the single rank represented directly the size of the contingent. He says that the troops (sipāh) of nobles do not exceed 5,000, while the ranks (mansabs) of princes were fixed at higher figures.[2] Thus the words sipāh and mansab appear here as perfectly interchangeable.

Statements by Nizāmuddīn Ahmad and Bāyazīd Biyāt also show beyond dispute that the single rank which was in vogue uptill the 40th regnal year was directly related to the size of the military contingent. In his concluding remarks to his list of Akbar's nobles, Nizamuddin Ahmad says:

"..... Let it be known that such of the Imperial servants as maintain only 500 retainers (nankār) are not counted among the umarā'(plural of amīr)."[3]

Here again the parity of number of retainers (nankār) with the number of the mansab is assumed. Nizamuddin adds

1. Akbarnāma, III, p.117.

2. Ibid., III, p.219.

3. Tabaqāt, II, p.456.

that he has only given in his list such nobles as had the rank (palla) of over 500. He acknowledges that he has used the list of the nobles given by Abul Fazl.[1] This list again gives only one rank; and one can thus deduce that contrary to the general assumption,[2] the mansabs given in the Āin's list are not zāt ranks, but the single comprehensive ranks that represented the number of troopers (while determining also the personal pay). Finally Bāyazīd records that he was made a do-sadī (i.e. held the rank of 200 - - in later parlance do-sadī would always mean 200 zāt), and then goes on to account for the two hundred sawars that he was so obliged to maintain.[3]

A change is noticeable, first of all, in the 40th regnal year (1595-6) itself: The paired rank makes its first (and very uncertain) appearance. It occurs in the following passage of the Akbarnāma:

"During this year the mansabdārs were grouped into three categories. First, those whose sawārs (sawārān, horsemen) are equal to their mansabs; second, one half or more; the third

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1. Āin, I, pp.222-32

2. Abdul Aziz, Mansabdari System, op. cit., p.110; M. Athar Ali, Mughal Nobility, p.8; A. J. Qaisar, Proc. I.H.C., 24th Session, op. cit., p.156; and Irfan Habib, 'The Mansab System (1595-1637)', Proc. IHC, 29th Session, p.212.

3. Bāyazīd Biyāt, Tazkira-i Humāyun-o-Akbar, ed., H. Husain, RAS Calcutta, 1941, pp.373-4.

less than that (one half of their mansabs), as is described in the last volume (Āīn-i Akbarī)."[1]

The Āīn-i Akbarī practically reproduces this text.[2] The description of this measure, read with the passages from Badauni and Bayazid, implies two things: First, the mansabdārs were expected to maintain horsemen equalling their mansab number; secondly, this expectation was not fulfilled by many of the mansabdārs. The Mughal administration acknowledged the force of reality and modified the system accordingly. From now on the number of sawārs, actually expected, began to be distinct from the mansab number. The single mansab that was in force now became valid for the payment of salary for the person (zāt) of the mansabdār only, while a new sawār-number was suffixed, against which the barāwurdī or partial rates were paid.

The origin of the name zāt for the first rank and barāwurdī for the second (or sawār) rank lies here. The terms were clearly in the final stage of evolution (but not yet established completely) when the main text of the Āīn was being

1. Akbarnāma, III, p.671.

2. Āīn, I, p.179. "A difference in monthly pay was instituted to accord with the sawār (cavalry). (The Emperor) gave him who has cavalry (sawār) equal to his mansab, the first grade (pāya); to him who has half or more, the second; and he put him who has less than that, into the third."

drafted (in or about the 40th regnal year). Even in the 41st year the distinction is not complete: Shahrukh is granted 5,000 zāt, half the sawārs being barāwurdī.[1] This means that 5,000 zāt still implied a theoretical strength of 5,000 (cavalry), though only half thereof (2,500) were paid for by barāwurdī. Soon afterwards this would be spoken of simply as 5000 zāt, 2,500 sawār. However, another reference to the two ranks occurs soon afterwards in the same year - 5,000 'zāt and sawār',[2] meaning 5,000 zāt and 5,000 sawār. Here the two ranks appear to be given full recognition.

Henceforth zāt determined the personal pay and the number of khāsa (personal) animals to be maintained according to the schedule in force. The sawār indicated the number of horsemen the mansabdār was required to maintain. The pay due against the sawār rank would be worked out from the rank-numbers by use of separate schedules sanctioned for the purpose.

It is thus clear that the two ranks (zāt and sawār) made their appearance, though not immediately with firm separate designations, in the 40th-41st regnal year (1595-7). When the Āʾīn was completed (1595-6) the separate zāt and sawār ranks were still in an embryonic form. As is evident from

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1. Akbarnāma, III, p.717.

2. Ibid., p.721.

Mu'tamad Khān's account of the introduction of the (single) mansabs in the 19th regnal year (1574-5), the payment for tābīnān (the mansabdār's troopers) was from the beginning distinct from the personal pay of the mansabdār. The regulations given in the Āin confirm that the payment for the zāt or 'person' (in the literal sense) of the mansabdārs was separate from that for his horsemen. It is indeed laid down that when a promotion in mansab was given, the increased pay for his person (zāt) was allowed immediately on the enhanced rank, but the amount for the additional troopers implied by the increase in rank was paid only after the dāgh (brand).[1] The rule shows that when it was formulated the mansab was still a single, not dual, rank; yet the payment for the person and cavalry of the mansabdār was separately made.

Therefore, though the zāt and sawār ranks were not distinguished until the 40th or 41st regnal year, and then also not without ambiguity, the actual situation prevailing immediately earlier was not very different from what it was after the 41st year (1596-7). The single rank was in one sense already the zāt rank; i.e. it indicated the personal pay and the number and composition of animals to be maintained on his 'personal' account by the mansabdār. It was also no longer a

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1. Āin, I, pp.191-2.

direct index of the size of the military contingent, as it was originally intended to be. By the 40th regnal year, it rather represented the maximum limit for the size of the contingent that the noble could present. But already the contingent, which the noble might actually present, or for which barāwurdi payment might be made in anticipation, was much smaller. This situation provided the basis for the formula for the three scales of 'personal' pay of mansabdārs, based on the ratio of the contingent to the total mansab, spelled out in the 40th regnal year. This 'contingent' was really the future second or sawār rank.

In the following sections, not only is the separate existence of the two ranks assumed for 1595-6 (this would in any case in accordance with fact), but for convenience of exposition the designations zāt and sawār are also employed for them, though, strictly speaking, this anticipates the later terminology.

II

We may now attempt to estimate the total expenditure on the personal pay of the mansabdārs.

The Āin-i Akbarī sets out the schedule of pay, as well as the detailed requirements of horses, elephants and beasts of

burden which were to be maintained by the mansabdārs as their personal contribution (khāsa). Since the schedules give the pay separately for each of the three grades of ranks created in the 40th regnal year, it follows that the pay-schedule of the Āīn cannot be of a date earlier than 1595-6.

The mansabs listed in the schedule start from 10,000 and come down to 10. According to Abul Fazl there were in all 66 ranks, equalling the numerical value of the letters in the name of God (Allah).[1] Blochmann's text and the British Museum MS Add 7652, however, list only 65 ranks, while against the rank of 600 two sets of figures specifying salary and animals are given. The schedule is given correctly in British Museum MS Add. 6552, which records the rank 1,250, omitted in the other MSS. It is assigned the pay that is given in the printed text and other MSS against 1,200. Then onwards, the pay of each rank in Add. 6552 is the one which is given in the printed text to the next lower rank; so down to 600, against which the second of the pair of g figures in the printed text is entered. Thus Add. 6552 enables us to restore the correct form of the schedule, with 66 ranks in all.

The schedule provides the salaries for all the three grades against each rank but no such grades exist above 5,000.

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1. Āīn, I, 179.

For the three ranks above 5,000 the salary is given only for the first grade. While the zāt salary varies among the remaining ranks according to the grades, the number of animals remains the same for all the three grades of each rank.

Abul Fazl says that in the 18th regnal year, together with the institution of dāgh or branding, a classification of animals was laid down, and schedules of the sanctioned 'average' costs of maintenance of various breeds of horses, elephants, camels, oxen, mules and carts were issued.[1] By the time the schedule actually reproduced in the Āin had been formulated, this classification seems to have undergone some changes. The Iqbālnāma-i Jahāngīrī, giving the earlier classification, records five breeds of horses,[2] while the Āin-i Akbarī gives seven classes.[3] The Āin sets out the costs of maintenance with a detailed break down.[4] This gives the cost calculated originally and the subsequent enhancements. In the case of horses three increments were granted. The first of these is said simply to have been made out of the Emperor's concern for

1. Āin, I, p.176.

2. Iqbālnāma, II, p.283.

3. Āin, I, p.176.

4. Ibid., pp.176-8. The most superior breed ('arabī) was not included among the horses required to be maintained as khāsa (Āin, 180-6) nor is the salary of horsemen with an arab horse set out in the 'dāgh' rates (Āin, p.188).

the comfort and welfare of the army. The rise in copper price of the rupee from 35 to 40 dāms in 29-30th regnal year,[1] compelled the Emperor to sanction another increment in rates. This suggests that though the costs were calculated in dāms, these were commuted into rupees at the time of actual payment. For elephants it is specifically stated, obviously by way of exception, that the payment remained fixed in dāms, and was unaffected by changes in the copper value of the rupee. An enhancement in rates for elephants was indeed sanctioned, but the reason is not recorded.

These rates (Āʾin-i Jandārān) were apparently sanctioned for payment for the animals, carts, etc., of the mansabdars to be maintained as their khāṣa and for those maintained by their troopers, after they had been actually branded (dāgh). This is evident from Abul Fazl's language as well as from the context. The rates precede the chapter on the mansabdārs setting out their zāt obligations and salaries. On the other hand, they follow the chapter entitled 'Āʾin-i Sipāhābādi', giving the barāwurdi-rates[2] and detailes of muster and branding. The columns of animals and carts in the mansab pay-schedules are arranged in exactly the same order in which they are given in

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1. Āʾin, I, p.28.

2. Ibid., pp.175-86, for the significance of barāwurdi-payments, see infra, sec. II.

the Āīn-i Jāndārān. The decisive piece of evidence is to be found in Abul Fazl's statement concluding the chapter on Āīn-i Jāndārān to the effect that elephants and carts were allowed only to mansabdārs and superior troopers (gazin-sawār) were to bring camels and oxen only for the brand.[1] This means that the rates applied both to the animals maintained by mansabdars under their 'zāt' ranks, and those by their troopers,, in fulfilment of the obligation against the mansabdārs' 'sawār' ranks.

To know the actual expenditure against what later was called the zāt rank, it has to be decided whether the maintenance cost of animals was paid over and above the stated salary or was included in it. Abdul Aziz has assumed that the mansabdārs were obliged to maintain these animals out of their own salaries, and the animals belonged to the State.[2] But this, as will be shown in the following paragraphs, is not possible, in view of the evidence of the Āīn itself.

The detailed specifications of average expenses in the Āīn-i Jāndārān could only be relevant if the Mughal administration had to use them to make payments at some stage. If it

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1. Āīn, I, p.178. Abul Fazl says (p.188) that troopers having more than one horse (ghair-i yak-aspa) were paid the allowance for a camel or an ox, equal to half the rate sanctioned for animals of superior horseman (gazida sawar).

2. Abdul Aziz, The Mansabdari System of the Mughal Army, pp.48-9.

was obligatory for each mansabdār to maintain the animals out of his own salary set out in the mansab pay-schedule, there would not be any need for the Imperial administration to make these meticulous calculations, especially since for the Imperial Stables such details are separately furnished.[1] To work out the salaries, only rough estimates would have sufficed. Furthermore, the Āīn says that for the elephants the payment was always made in dāms. If it was not a separate payment it would have been difficult to assimilate it to the salaries which are given in rupees.

The crucial evidence is Abūl Fazl's statement that certain enhancements in the sanctioned costs of maintenance were made to provide relief to the army, i.e. the mansabdārs. This could hardly have been the case if the payments for these animals were made by the mansabdārs out of their own salaries. Clearly, it was the mansabdārs themselves who received the enhanced rates, in order to have drawn any benefits from the enhancements.[2]

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1. Āīn, I, pp.133-44.

2. To anticipate a possible suggestion that these enhancements might have been assimilated through increase in zāt (personal) pay, we should remember that (i) there is no statement in the Āīn to justify the supposition of such a second round of adjustments; and (ii) the adjustments for enhancements in maintenance costs would have resulted in detailed figures for mansab-pay, whereas the pay figures are invariably (with just one or two exceptions) in round numbers or, in case of low ranks, with 5, as the last digit.

There is one more argument still, for refuting Abdul Aziz's hypothesis: If the monthly salaries stated in the schedules include the allowances for animals, on subtracting the expenses on these obligations from the stated salaries, we should have the net salaries. But we find that calculations on this basis give us impossibly low net salaries for some ranks. For example, the holder of rank 20 in category I would have Rs.21.50; category II, Rs.11.50; and category III, Rs.150 only. But the pay of even a yak-aspa (trooper with one horse) was Rs.12 per month, allowed on the most inferior horse (jangla). Further, if we go on calculating on the basis of Abdul Aziz's hypothesis, the net salary fixed by the Mughal administration for the rank of 10 would turn out to be higher than that for 20 and for the rank of 300 slightly higher than that for 350. Moreover, there would hardly have been any difference between the net salaries for the ranks (category I) of 3,500 and 3,000; 800 and 700; and 200 and 150.[1]

One must therefore, accept what the Āin plainly implies, viz., that the allowances for the animals and carts were paid in addition to the personal (zāt) salaries, and were not assimilated to them.

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1. These calculations are made by simply deducting the figures for allowances of animals in Table I (below) from the sanctioned monthly salaries.

It is also not possible to assume with Abdul Aziz that the animals maintained by the nobles according to the pay schedule of mansabdārs were those of the Imperial stables, lent to them for maintenance and use. The Iqbālnāma giving the account of the 19th R.Y. explicitly refers to the mansabdārs' own 'personal' elephants and horses (fil-o-aspa-i khāsa-i khwud),[1] which were to be brought for muster and brand. According to Abul Fazl, somewhere before the 40th R.Y., the practice of the mansabdārs' bringing the elephants to the brand was discontinued,[2] a thing hardly possible if these were Imperial elephants.

It seems that the practice of assigning the Imperial elephants to the mansabdārs and obliging them to maintain these out of their own salary (khwurāk-idawābb) was a later development, though its origin might be traced to Akbar's time. Abul Fazl does d say that the Imperial elephants were divided into halqas and were placed under nobles; but he explicitly adds that fodder (khwurash) for them was supplied by the state.[3] For horses too there were similar arrangements; the fodder ('aliq-o tazim) however was supplied by the Imperial Establishment.[4]

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1. Iqbālnāma, II, p.288.
2. Āin, I, p.128.
3. Ibid., p.135.
4. Ibid., p.141.

Thus, for determining the expenses against the 'zāt' rank one has to add the allowances sanctioned for the animals to the salaries recorded in the pay-schedule. The Āʾīn's detailed break-down of costs and specification of animals and carts to be maintained makes it possible to calculate the amount paid for the animals and carts, which may then be added to the zāt salaries. The total payments so worked out are given in Table I: Figures in it are worked out only for 'effective' ranks, i.e. the ranks actually awarded, being those specified in the Āʾīn's list of mansabdārs.

Table I

Mansab	Monthly Salary (in rupees)			Allowances for animals & carts (in rupees)
	I	II	III	
10,000	60,000	-	-	20,849.00
8,000	50,000	-	-	16,992.75
7,000	45,000	-	-	14,643.63
5,000	30,000	29,000	28,000	10,703.50
4,500	26,000	25,800	25,700	9,416.88
4,000	22,000	21,800	21,600	8,422.88
3,500	18,600	18,400	18,300	7,702.13
3,000	17,000	16,800	16,700	6,568.25
2,500	14,000	13,800	13,700	5,254.75
2,000	12,000	11,900	11,800	4,219.13
1,500	9,000	8,900	8,800	3,431.40
1,000	7,700	7,400	7,100	2,838.50

900	5,000	4,700	4,400	2,464.88
800	4,000	3,700	3,600	1,968.13
700	3,500	3,200	3,000	1,486.00
600	2,800	2,750	2,700	1,314.25
500	2,500	2,300	2,100	1,144.75
400	2,000	1,700	1,500	726.50
350	1,450	1,400	1,350	612.50
300	1,400	1,250	1,200	561.00
250	1,150	1,100	1,000	485.50
200	975	950	900	446.50
150	875	850	800	354.50
120	745	740	730	329.00
100	700	600	530	302.50
80	410	380	350	241.00
60	300	285	270	186.50
50	250	240	230	186.50
40	223	200	185	164.00
30	175	165	155	121.50
20	135	125	115	113.50
10	100	82.5	75	44.00

With this schedule at hand, once we can determine the number of mansabdārs in each rank at a particular point of time, we may compute the total amount required to meet the entire pay-claim against the 'zāt' ranks, as well as the

proportion that it bore to the expected net revenue-income or the jamaʿ of the Empire.

As mentioned above, two lists of Akbar's mansabdārs are available. The first is given by Abul Fazl in his Āīn-i Akbarī.[1] This list, closed in the 40th year of Akbar, contains the names of all the mansabdārs of 500 and above, whether dead or alive at the time the list was compiled. Abul Fazl also gives the names of mansabdārs holding mansabs below 500 but not less than 200, confining this list professedly to those alive in the 40th R.Y. As for the mansabdārs of below 200, he contents himself with providing the number of recipients in each rank in that year.[2]

According to Abul Fazl, the list was completed in the 40th regnal year (1595-6), but it seems to have been partially out of date even before this year. Though the Tabaqāt-i Akbarī, which closed in 1593, and which contains the second list, refers to Abul Fazl's list, it shows some significant changes.[3] It adds 15 new names of those alive, while for 28 mansabdārs it gives mansabs higher than those

1. Āīn, I, pp.222-31.

2. Ibid., 223.

3. Tabaqat, pp.425-56. Cf. I. Habib, 'The Mansab System 1595-1637', Proc. I.H.C., Session , pp.228-49.

recorded in the Āin. Evidently, the Āin's list was originally compiled sometime before 1593; and though additions were undoubtedly made to it by Abul Fazl himself, in order to include promotions or new appointments, these additions were not comprehensive enough. The Tabaqāt does us further service by omitting to assign any mansab to those whom Abul Fazl has awarded fictitious 'posthumous' mansabs.[1] It also takes care to specifically mention the fact of their demise against such nobles as were no longer alive.

Supplementing and correcting the Āin's list with that of the Tabaqāt, one can determine with a fair expectation of accuracy, the number of mansabdārs of each rank alive in 1595.

Though, as we have seen, the mansabs given in those two lists are formally the single mansabs, determining the personal salaries as well as the size of the contingent, these mansabs afterwards continued as the zāt ranks (see Section I) and can be used to compute the total payment on account of the personal monthly salaries and allowances for animals. Here the only difficulty since the size of the contingent maintained by each mansabdār is not known, it is not possible to work out the number of the mansabdars in each of the three categories

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1. A.J. Qaisar, 'Note' & c., op. cit., pp.155-7.

(based on the ratios of size of contingent to number of rank) in which each rank was subdivided. One cannot thus determine the exact amount of total pay against the zāt ranks. However, the category-wise variations in the pay schedule are marginal and a range can be worked out by assuming two extreme possibilities, viz., that all the mansabdārs belonged to the first category; and, that alternatively, all belonged to the third category.

Table II gives the total number of mansabdārs against each rank, together with the total pay plus allowances for animals and carts worked out for them.

Table II

Mansab	No. of holders	Totat zāt Salary (in rupees)			Allowances for animals
10,000	1	60,000	(60,000)	(60,000)	20,849.00
8,000	1	50,000	(50,000)	(50,000)	16,992.75
7,000	1	45,000	(45,000)	(45,000)	14,643.63
5,000	9	270,000	261,000	252,000	96,331.50
4,500	1	26,000	25,800	25,700	9,416.88
5,000	3	66,000	65,400	64,800	25,268.64
3,500	2	37,200	36,800	36,600	15,404.26
3,000	4	68,000	67,200	66,800	26,273.00
2,500	3	42,000	41,400	41,100	15,764.25
2,000	9	108,000	107,100	106,200	37,972.17

1,500	7	63,000	62,300	61,600	24,019.80
1,000	16	123,200	118,400	113,600	45,416.00
900	12	60,000	56,400	52,800	29,578.56
800	2	8,000	7,400	7,200	3,936.26
700	16	56,000	51,200	48,000	23,776.00
600	4	11,200	11,000	10,800	5,257.00
500	31	77,500	71,300	65,100	35,487.25
400	17	34,000	28,900	25,500	12,350.50
350	19	27,550	26,600	25,650	11,637.5
300	32	44,800	40,000	38,400	17,952.00
250	12	13,800	13,200	12,000	5,826.00
200	81	78,975	76,950	72,900	36,328.50
150	53	46,375	45,050	42,400	18,788.50
120	1	745	740	730	329.00
100	250	175,000	150,000	132,500	75,625.00
80	91	37,310	34,580	31,850	21,931.00
60	204	61,200	58,140	55,080	38,046.00
50	16	4,000	3,840	3,680	2,984.00
40	260	57,980	52,000	48,100	42,640.00
30	39	6,825	6,435	6,045	4,738.50
20	250	33,750	31,250	28,750	28,375.00
10	224	22,400	18,480	16,800	9,855.00
Total		18,15,810	17,23,865	16,39,225	7,73,793.45
Total (dáms/ year)		87,15,88,800	82,74,55,200	78,68,28,000	37,14,20,856

1,19,88,76,056

It appears that while the total number of the <u>mansabs</u> on the pay-schedule was 66, appointments were actually made to 33 only. Placing all the <u>mansabdārs</u> in each of the three categories by turn, three different sums have been worked out for total salary and allowances for animals against the <u>zāt</u>-ranks. The pay-schedule in the <u>Āin</u> records the salaries in terms of rupees per month. These I have converted into <u>dāms</u> per annum, at the <u>Āin</u>'s own rate of 40 <u>dāms</u> to the rupee. We get a minimum of 78.68 crores <u>dāms</u> per annum if all the <u>mansabdārs</u> belonged to category III, and a maximum of 87.16 crores, if all of them were in category I. Perhaps the total based on category II, viz., 82.75 crores is likely to have been closest to the actual salary bill for the '<u>zāt</u>' ranks. The total allowance for animals works out at 37.14 crores. This remains constant for all the three categories. Adding this to the expenditure on salaries we have a maximum of 124.30 crores and a minimum of 115.82 crores of <u>dāms</u> per annum.

Since the effective <u>jama</u> of the Empire given in the <u>Āin</u> works out at 4,05,57,39,223 <u>dāms</u> for 1595-6, the expenditure on the '<u>zāt</u>' salary comes to between 28.56 and 30.65% of the expected net income of the Empire. It would be practically 29.56%, if one assumes that all the <u>mansabdārs</u> belonged to Category II.

III

As we have seen in Section I, it became a practice from 1595 onwards to designate separately the number of cavalry men that the mansab-holder was to keep, it being never more than the number of his rank. This led to the creation of an additional, sawar, rank, the original rank coming to be designated as zat. The fixation of amounts paid for a the cavalry (sawārs) maintained by the mansab-holders, remained a complex process, both before the emergence of a separate sawār-rank and afterwards. The fixation was 'initially carried out in two stages.[1] At first, while a person was awarded a 'sawār'-rank (either at the first appointment or by way of promotion), he was paid in anticipation at a uniform rate per unit of 'sawār'-rank. This rate was known as barāwurdi.[2] It was an ad hoc payment to be adjusted after the recipient presented his men and horses for inspection and dagh (brand and descriptive roll).[3] The final salary was fixed

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1. Cf. Irfan Habib, 'Mansab-System', op. cit., p.227, where the significance of barāwurdi, as an estimated pre-dagh rate, was brought out for the first time.

2. Āin, I, p.176.

3. Ibid., I, p.176. If a mansabdār found it difficult to muster horsemen, he was given some enrolled ('branded') troopers (naqsh-pizir-raftagan), as part of his contingent. But he was not paid the allowance for them. These troopers, designated dākhili, obtained their salaries directly from the Imperial treasury on verification by the mansabdārs to whom they were assigned (p.191). However, the dākhili troopers were assigned only to mansabdārs of 500 or above, and only up to a proportion of their rank. Thus the mansabdār of 5,000 could only have dākhilis for meeting the obligations of the rank of 500, and so on; the mansabdār of 500 could have them up to 100.

on the basis of the contingent of troopers (tābīnān) actually brought to the brand (dāgh).[1] The pay sanctioned upon branding was determined by such factors as the number of horses per trooper, the breeds of the horses and the race to which the mansabdār belonged.[2]

The Akbarnāma gives the barāwurdī rates as revised in the 40th R.Y. The new schedule allowed 1,000 dāms a month for a sih-aspa ('with three horses'), 800 dāms for a do-aspa ('with two horses'), 600 dāms a month for a yak-aspa ('with one horse'). In the case of Rajput mansabdārs, the rates were lower, viz., 800 dāms a month for a sih-aspa and 600 dāms a month for a do-aspa.[3]

The need to fix the rates separately, for horsemen with three, two and one horse seems to have arisen, owing to

1. Āīn, I, pp.176, 191.

2. The rates varied with the race of the mansabdārs and not of cavalry troopers. Cf. Irfan Habib, 'Mansab-System', op. cit., p.233.

3. We come across another schedule in a MS of Iqbālnāma-i Jahāngīrī (Br. Mus. Or 1834), allegedly in force in 1605; the rates given are 1000,800 and 400 tankas respectively (cf. I. Habib, Mansab System, op. cit., p.235); The tankas here seem to be a mistake for dāms, though in the case of yak-aspa, the rate would be too low. Even for the maintenance of the jangla horse the sanctioned amount was 240 dāms a month (Āīn, I, p.177); the amount left for the trooper would be a mere 160 dāms per month, if the Iqbālnāma rates were followed.

the requirements, separately fixed, of different numbers of each category of troopers in each contingent of ten horsemen (lit. the contingent maintained by a '*dahbāshī*'). At an earlier stage the formula for such composition was 2-*chahār aspa* (4-horse troopers), 3 *sih-aspas* 3 *do-aspas*, and 2 *yak-aspas*. But by the time the *Āīn* was compiled, the standard requirement had been altered to 3 *sih-aspas*, 4 *do-aspas* and 3 *yak-aspas*.[1] On the basis of this formula, the average rate per unit of *tābīnān* ('*sawār*' rank) works out at 800 *dāms* or Rs.20 per month.[2] This rate of Rs.20 a month obtains further confirmation from the earlier *barāwurdī* rates recorded in the *Āīn*. This schedule which is professedly for *barāwurdī*, allows Rs.25 a month for (horsemen serving) Iranis and Turanis, Rs.20 for Indians and Rs.15 for revenue collectors of the Imperial Establishment (*ʿamal pardāz-i khālisa*).[3] It, therefore, seems that in the schedule of 1595 the standard amounts have not been revised (since 1,000 *dāms* = Rs.25; 800 *dāms*=Rs.20; 600 *dāms* = Rs.15). What was altered was the basis on which the rates were sanctioned. The rates were now fixed on the more reasonable ground of the number of horses per trooper. However,

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1. *Āīn*, I, p.188.

2. See W.H. Moreland, 'Rank (*mansab*) in the Mughal State Service', *JRAS*, op.cit.; Irfan Habib, '*Mansab*-System', op. cit., pp.234-5, the interpretation offered of this passage by the latter seems rather forced.

3. *Āīn*, I, p.175.

the revision did place the Rajput mansabdārs in a less advantageous position. For the Rajputs now the average rate per unit of 'sawār' rank works out at 660 dāms a month only.

The Āīn-i Akbarī also gives the rates of pay of yak-aspas, varying according to horses of various breeds.[1] The amount allowed for the trooper in each case can be calculated by subtracting the cost of maintenance of the horses of the different breeds, given elsewhere in the Āīn.[2]

Table III

	Pay of yak-aspa	Sanctioned rate for horses	Balance theoretically left with the trooper
Iraqi	Rs. 30	Rs. 17	Rs. 13
Mujannas	,, 25	,, 14	,, 11
Turki	,, 20	,, 12	,, 8
Yabu	,, 18	,, 10	,, 8
Tazi	,, 15	,, 8	,, 7
Jangla	,, 12	,, 6	,, 6

To judge from the documentary evidence of Shahjahan's

1. Āīn, I, p.188.
2. Ibid., I, pp.176-7.

time, the horses most commonly in use were Turki and Yabu.[1] It would be a fair assumption to take Rs.8 per month as the amount normally allowed for the personal subsistence of the trooper. It then becomes evident that for calculating the *barāwurdī*-rate, the Mughal administration allowed for the most inferior horse, that is, *jangla* (with its monthly maintenance cost at Rs.6). The rate for a standard contingent of 10 can then be worked out as follows:

3 *sih-aspas*	:	Rs.3 x (6x3+8) = 78
4 *do-aspas*	:	Rs.2 x (6x2+3) = 80
3 *yak-aspas*	:	Rs.3 x (6x1+8) = 42
Total 10 horsemen		Rs. 200

A total of Rs.200 allowed for 10 horsemen gives us a monthly rate of Rs.20 or 800 *dāms* per unit of cavalry or *sawār*-rank (*tābīnān*); and this happens to be exactly the rate which we have derived from the *Akbarnāma*'s *barāwurdī* rates for the 40th year.

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1. R.A. Alavi, 'New Light on Mughal Cavalry', *Medieval India-A Miscellany*, Vol. II, p.73. In a sample of 1750 troopers, with 1775 horses, the Turki horses numbered 981 (54%), Yabu 422 (26%) and Tazi 340 (18%). There were only 31 Jangla horses, amounting to less than 2%. No horses superior to Turki were recorded.

While the *barāwurdī* payment was sanctioned at the same rate as for the most inferior horse, enhanced payment on account of horses of superior breeds was made when such horses were actually brought to the brand (*dāgh*).[1] The *dāgh*-rate therefore might change for a *manṣabdār* at each *dāgh-i mukarrar* (subsequent brand), even if his rank remained the same.

It, therefore, does not seem possible to calculate the actual Imperial expenditure on the cavalry of the *manṣab-dārs*. Nevertheless, one may place a lower and upper limit for such expenditure. The minimum expenditure can be worked out by assuming that the payment was made according to *barāwurdī*-rates against the entire '*sawār*'-rank. The maximum *daghi* payments can be estimated by proceeding on the assumption that all the horses brought to the brand (*dāgh*) were of a superior quality, say, Turki (whose sanctioned maintenance cost was Rs.12/month). To take them all as Iraqi or Mujannas, the two most superior categories would, of course, be unreasonable.

The monthly *dāghī* rate per unit of '*sawār*'-rank, if all the horses were Turki, may be worked out as follows

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1. *Āīn*, I, p.189 and 191; *Akbarnāma*, II, p.147.

(calculating for the standard contingent of ten horsemen):

3 <u>sih-aspas</u>	:	3 x	(12x3) + 8	= 132
4 <u>do-aspas</u>	:	4 x	(12x2) + 8	= 128
3 <u>yak-aspas</u>	:	3 x	(12x1) + 8	= 60
			Total	= 320

This would give Rs.3,840 per annum for 10 horsemen Rs.384 (i.e. 15,360 <u>dāms</u>) per annum for one unit of <u>sawār</u>-rank.

Now, with the <u>barāwurdī</u> and <u>dāghī</u> rates at hand, as the floor and ceiling of expenditure per unit of '<u>sawār</u>'-rank, we can go on to compute the minimum expenditure on <u>mansabdārs</u>' cavalry by treating the total '<u>sawār</u>'-rank as <u>barāwurdī</u>; and to compute the maximum by assuming, that the payment against the entire <u>sawār</u>-rank was made according to the <u>dāghī</u> rates for Turki horses.

As noted earlier, there is no list of Akbar's <u>mansab dārs</u> specifying <u>sawār</u> ranks. It is, therefore, not possible to determine the actual number of <u>sawār</u>-ranks, with a firm degree of precision. An attempt at rough estimation can, however, still be made.

The <u>sawār</u>-rank begins to be mentioned in the <u>Akbarnāma</u> from the 41st R.Y., though only occasionally. It is in the account of the closing years of Akbar's reign contained in the

Iqbālnāma that sawār-mansabs begin to be recorded almost regularly. By assembling the recorded pair of zāt and sawār ranks for the last years of Akbar's reign, we can work out the average ratio between the number of zāt and sawār-ranks on the basis of a fairly large sample.

Taking into account only those mansabdārs (47 in number) for whom both the zāt and sawār-ranks are recorded in the Iqbālnāma from the 47th to 50th R.Y., the total of sawār numbers awarded amounts to 59.15% of the zāt ranks. This ratio of sawār to zāt rank is corroborated by the information available for the early years of Jahangir. During the 2nd and 3rd years of his reign the ratio of sawār to zāt rank worked out from all the references to ranks given in the Tuzuk-i Jahāngīrī comes respectively to 100:64.42 and 100:57.95.[1] It should then be reasonable to take 'sawār' rank as amounting to 60% of the zāt-mansabs for the year 1595 as well.

Given this ratio, the total number of mansabs against which cavalry was required in 1595-6 should have

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1. I have calculated from data willed from Tuzuk-i Jahāngīrī, ed. S. Ahmad, Aligarh, 1864, pp.41-73.

been 1,88,070, being 6/10 of the total of mansabs (3,13,450) indicated by Abul Fazl's list and statistics corrected by information from Nizāmuddīn Ahmad. Now this included both cavalry which had been inspected and branded and paid for at dāghī rates, and cavalry that was due to be maintained, but not yet brought to the brand, and paid for at barāwurdī rates. It may be assumed then that while the maximum size of cavalry that Akbar's mansabdārs would have maintained was 1,88,070, in actual fact, it should have been much smaller. This fits pretty well with what we know of the size of the Mughal army in Shahjahan's time (1646-47). According to Lāhorī's estimate based explicitly upon an application of the Rule of One fourth to the total of mansabs held at that time, the total number of cavalry was 185,000.[1] Since the Empire had expanded somewhat by this time, the proximity of the actual size of Mughal cavalry, to the maximum size under Akbar seems quite reasonable. This, then is a fairly good confirmation of our supposition that the ratio between the mansab and the equivalent of sawār-rank in 1595-6, was 10 : 6.

To apply the barāwurdī-rates for calculating the

1. Lāhorī, II, p.719.

pay-claim (*talab*), we should in addition know the total *sawār* ranks of the Rajputs, since they were assigned lower *barāwurdī*-rates. From the list of the *Āʾīn* supplemented by the *Tabaqāt*, we can see that the total number of *mansabs* of the Rajputs on the list was 29,650, while the total *mansabs* of all recipients listed, was 2,41,250.[1] That is the share of the Rajputs in the *zāt* ranks held by holders of 200 and above was 12.29%. Assuming that this was approximately the percentage in '*sawār*' ranks as well and giving the total *sawār* rank as 1,88,070 (60% of 3,13,450; the total of *mansabs*, based on the *Āʾīn*'s figures), the total '*sawār-mansabs* of the Rajputs may be estimated at 23,114.

Proceeding from these figures, the estimation of the minimum and maximum expenditure on the cavalry of the *mansabdārs* is a matter of simple arithmetic. Multiplying the total *sawār* ranks for non-Rajputs, viz., 1,64,956 by the *barāwurdī* rate of 9,600 *dāms* per annum and the *sawār*-ranks of Rajputs, viz., 23,114 by 7,920 *dāms*, and adding the two products we get the floor for the total pay sanctioned for the *mansabdārs*' cavalry, viz., 1,76,66,43,811 *dāms* per year. This would be 42.76% of the total *jamaʿ* calculated from the *Āʾīn*.

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1. It should be noted that Hindus other than Rajputs are not included among the Rajputs by us.

The maximum limit can be obtained by multiplying the total estimated sawār-rank (1,88,070) by the hypothetical dāghi-rate of 15,360 dāms per unit of sawār rank per year. This yields a total of 2,88,87,55,200 dāms or 69.93% of the total jamaʿ of the Empire.

Though the two figures set the minimum and maximum limits on expenditure against 'sawār'-rank salaries, they are of little help in getting an estimate of the actual level that lay in between. This can be estimated only if we can determine the portion of the total sawār-rank on which only barāwurdi payments had been made, whereby we might make separate calculations for the total barāwurdī and dāghī payments. For this we have no direct evidence whatsoever. But it seems certain that the proportion of sawār-rank on which dāghī payments were made could not have been very high. The manṣabdārs did not always maintain as many horses and men as were required under their 'sawār' rank. A despatch by Abūl Fazl from the Deccan suggests that even bringing one-half of the required number to the brand was not usual.[1] We can then hardly assume that dāghī payments accounted for more than a

1. Ruqaʿāt-i Abūl Fazl, litho., p.45. This collection of letters, however, contains some material that seems to have been interpolated later.

third of the '*sawār*' ranks. Moreover, even when the full number was brought to the brand (*dāgh*), the additional payment on *dāghī*-rates was not always made. This is the burden of Bayazid Biyat's complaints.[1] Finally, if six years elapsed after the last muster (renewal of the *dāgh* was due every three years),[2] a deduction of 10% was made on *sawār*-rank payments, and this continued until the horses and men were presented for the *dāgh* and muster afresh. If a promotion was granted and three years passed after the last brand (*dāgh*), no payment (even on *barāwurdī* rates) was made for the additional ~~*sawār*-rank, pending the actual presentation of men and~~ horses for the brand.[3]

It should, therefore, be an acceptable assumption that the '*sawār*' ranks against which *dāghī* rates were paid, did not exceed one-third of the *manṣabs* on which only *barāwurdī* payments had been made. We may therefore, reasonably proceed on the hypothesis that '*sawār* ranks were divided in a 1:2 ratio, into those (a) against which only *barāwurdī* and (a) against which *dāghī* payments had also been made. On this

1. Bayazid Biyat, op. cit., p.373.
2. *Āīn*, I, pp.191-2.
3. *Ibid.*, I, p.192.

basis, the total expenditure on the sawār-rank payments can be estimated at 2,14,06,43,040 dāms, that is, at 52.78% of the total effective jamaʿ of the Empire in 1595-96.

We may now recall our estimate for the payments against the 'zāt' ranks, viz., 82,74,55,200 dāms. The total payments against the mansabs (both 'zāt' and 'sawār' ranks) would give our assumption of 1:1 ratio between barāwurdī and dāghī payments, can be estimated at 339.95 crores. One can, therefore, suggest that 82.34% of the effective jamaʿ in 1595-96 was alienated in payments to the mansabdārs.

IV

We have just suggested that the total income of all the mansabdārs accounted for 81% of the total jamaʿ. Putting it differently, we may say that 81% of the entire net revenue resources of the Empire was approximated by just 1,671 persons. This concentration of revenue resources becomes still more pronounced, when we analyse the pattern of distribution among the various ranks of the mansabdārs. The table below gives the total expenditure (against the zāt and against the sawār ranks) on different ranks as per-centages of the total expenditure on mansabs salaries. The mode of calculation of

the expenditure against the *sawār*-ranks is the same as has been followed above in calculating the entire expenditure on the total *mansabs* (i.e. assuming a ratio of 2:1 between the *barāwurdī* and *dāghī* payments).

Mansabs				No. of *mansabdārs*	Salary as % of *jama'*
From	10,000	to	5,000	12	18.52
,,	,,		2,500	25	42.02
,,	,,		500	122	52.12
,,	,,		100	487	71.41
,,	,,		10	1,671	82.13

Thus within the various classes of *mansabdārs* there was again a very high degree of concentration. The top 12 controlled 18.52% of the total *jama'*; and no less than 52.12% of the total net income of the Empire was required to meet the pay claims of 122 *mansabdārs* holding the rank of 500 and above: The remaining 1,549 *mansabdārs* controlled only 30% of the revenues.

These figures give us a measure of the immense concentration of revenue resources in the hands of a very small number of persons constituting the core of the ruling class under Akbar.

This concentration of wealth (and power) seems to have continued under Akbar's successors. For Jahāngir's reign we do not have the necessary data; but from Shahjahan's reign we have lists of mansabdārs at the end of the 10th and 20th R.Y. in Lahori,[1] and at the end of the 30th R.Y. in Waris.[2] These lists give the ranks of all the mansabdārs holding the zāt mansab of 500 and above. The pay-schedules prevalent under Shahjahan have also survived.[3] Lahori gives the estimated income of the Empire for the year 1646-47.[4] On the basis of these data, Qaisar has worked out the distribution of revenue resources for the year 1646-47.[5] According to his calculations, 445 mansabdārs holding the zāt rank of 500 and above, claimed 61.5% of the total jama'. We have seen that under Akbar the top 487 mansabdārs controlled 71.41% of the revenue, implying almost the same degree of concentration. However, the higher strata under Akbar seem to have taken a much larger share than under Shahjahan. The top 25 mansabdārs under Shahjahan controlled 24.3% of the jama'; but under Akbar the pay-claim of the top 25 accounted for as much as 42% of the jama'.

1. Lahori, Badshahnama, Bib. Ind., pp.717-52.
2. Mohammed Waris, Badshahnama, Br. Mus. Add 6556; Or 1675 (Transcripts in the Department of History, A.M.U.)
3. Selected Documents of Shahjahan's Reign, pp.79-84.
4. Lahori, II, p.729.
5. A.J. Qaisar, Proc. IHC, 1965, pp.240-3.

Chapter X

EXPENDITURE ON THE IMPERIAL MILITARY ESTABLISHMENT

In delineating the pattern of distribution of the gross national product the next step would be to estimate the expenditure on the Imperial military establishment. In addition to the mansabdārs and their troopers the Mughal administration maintained Imperial horsemen (ahadīs), auxiliaries (kumakī), infantry (piyādagān) and artillery.[1] The large number of war animals and beasts of burden (horses, elephants, camels, mules and oxen) belonging to the Imperial stables too would have required a not inconsequential proportion of the total revenue resources of the Empire. The expenses incurred on the Imperial arsenal, armoury and fire-arms could not also have been negligible.

On the basis of information given in the Āin, one may attempt an estimate of the expenses incurred on these various items. While the information is not detailed enough to lead to a precise estimate of expenses, at least the extreme limits can perhaps be determined.

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1. Āin, I, p.175.

I

AHADIS

According to Abul Fazl some troopers were not awarded a mansab but they were also not placed under the command of anyone else. They were among the Imperial servants (bandagan-i khas) and served individually, being paid directly from the Imperial treasury. Such troopers were known as ahadis;[1] as if, that is, their mansab was one (ahad).[2]

The Ain tells us that Akbar set fresh regulations (dasturs) for the gradation of the Ahadis and laid down the procedure for their recruitment and fixation of salary. Separate diwans and bakhshis were appointed for them.[3] These measures were most probably a part of his great attempt at administrative and military reorganization, undertaken about the 19th regnal year (1575-6). The ahadis seem to have

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1. Ain, I, pp.175 & 187.

2. The practice of maintaining some horsemen as Imperial troopers seems to have continued from Humayun's reign: Khwandmir mentioned them among those belonging to the 4th of the twelve grades (tir; lit. arrow) (Qanun-i Humayuni, p.44). The Imperial horsemen seem to have been previously called yakka tazan (lit. single riders) and are referred to as such by Khwandamir. The name was altered during Akbar's reign to ahadis (Akbarnama, III, p.219).

3. Ain, I, p.187.

formed the lower ranks of the Imperial service; they were also employed in various Imperial kārkhānas. It is a little difficult to determine their precise number. Abul Fazl says under the 22nd regnal year that the number of the Imperial horsemen (sawāran-i khāsa) had been fixed at 12,000; and that these were known as ahadis.* But this figure becomes somehow suspect at least for the 40th regnal year on account of the comparatively low figure for the ahadis reported for the time of Akbar's death and the early years of Jahangir's reign. Pelsaert, giving the number of those "from the highest to the lowest who, after Akbar's death entered Jahangir's service" enters 741 chāhar aspa (4-horse troopers); 1,322 sih-aspa (3-horse troopers); 1,428 do-aspas (2-horse troopers); and 950 yak-aspas (1-horse troopers) i.e. 4,441 ahadis, in all.[1] Hawkins, writing in the early years of Jahāngir (1608-13), gives the number of "haddies" (ahadis) as 5,000; but his 5,000 included horsemen with six horses (shash-aspa) as well.[2] By Shāhjahān's time while the number of the mansabdars had increased considerably, Lāhori gives the number of 7,000 for the ahadis and barq-andāz sawār (mounted musketeers), under the 19th regnal year (1647).[3]

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* Akbarnāma, III, p.219.
1. Pelsaert, p.35.
2. Early Travels, p.99.
3. Lāhori, II, p.715.

This evidence for the number of ahadis during the succeeding two reigns, then, suggests that, Abul Fazl's figure of 12,000 is much too high. The very context in which Abul Fazl has mentioned the number of ahadis hints at the possibility of overstatement. This statement is immediately followed by the account of the award of the mansab to the royal princes. Abul Fazl states that the number of the troops of nobles did not exceed 5,000; and the number of the sawaran-i khasa called the ahadis has been fixed at 12,000. He, then goes to give the ranks awarded to the princes which ranged from 6,000 to 10,000.[1] It seems that Abul Fazl here is treating the number of the ahadis as equivalent in a sense to the rank of the Emperor himself, since at that time the number of rank indicated the number of troopers that had to be maintained.[2] He could, therefore, hardly have admitted that the actual number of the Emperor's own troopers was only 5,000.

We, therefore, should take Pelsaert's figures of ahadis at the death of Akbar as more plausible. An interesting point to note is that his break-down of the ahadis into

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1. Akbarnama, III, 219.

2. See my article 'Evolution of Mansab-system under Akbar', JRAS, 1980 (in press).

chahār-aspas, sih-aspas, do-aspas and yak-aspas in ratios of 2 : 3.6 : 3.8 : 2.5 practically conforms broadly to the standard formula of composition (2:3:3:2) prescribed for the mansabdārs' contingents, when the mansabdār was required to maintain the chahār-aspa as well.[1]

Abul Fazl says that quite a few ahadis received more than 500 rupees per month. Such cases must have been very exceptional, since even the personal monthly pay of a dah-bāshi (commander of 10 troopers) was Rs.100.[2] On the other hand Badāūnī gives the barāwurdi pay (ʿalūfa-i barāwurdī) as only six rupees a month; he, however, mentions only do-aspa, yak-aspa and a nīm-aspa among the categories of the troopers, the nīm-aspa being a trooper sharing his horse with another trooper.[3] The rate quoted by Badāūnī seems a little low, since the barāwurdi rate for a yak-aspa trooper of a mansabdār was 600 dāms, or Rs.15 a month.[4]

Whatever the amount allowed to an ahadī, it is quite evident from the Āʾīn-i Akbarī's description that the pay was fixed in two stages, in the same manner as was the talab-i

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1. Āʾīn, I, pp.187-8.
2. Ibid., I, p.186.
3. Badāūnī, II, p.191.
4. Akbarnāma, III, pp.671-2.

tabinan (pay against the sawar-rank) of the mansabdars. At the time of appointment the provisional (barawurdi) rates were allowed; and these were afterwards enhanced by 12½ to 700% (azhim sawai —— ta dah-haftad).[1] The total salary was consisted of his personal allowance (rozgar) and allowance for his horse (kharch-i-satur).[2]

Though one has to assume a wide disparity in the rates paid to the ahadis, the average scale of pay may be worked out on the basis of allowences, sanctioned by the Imperial administration for the horses of various breeds and the pay allowed for a yak-aspa trooper with different breeds of horses,[3] following the same procedure as the one for working out the daghi-rate for mansabdars' troopers.

Since a dahbashi was required to keep Turki and Yabu horses in even proportion against his personal rank,[4] and these were the two breeds mostly maintained by other tabinan.[5]

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1. Ain, I, p.187.
2. Ibid.
3. Ibid., p.188.
4. Ibid., p.186.
5. See Chapter IX.

One may not, therefore, be far wrong in assuming that the ahadis too maintained horses of these two breeds. Moreover, except for the first horse, all subsequent horses were provided to the ahadis in part-payment of their salaries by the administration;[1] so that horses of the ahadis generally should have been of superior breeds. We may allow the same amount for personal subsistence of the ahadis as was sanctioned for the horsemen maintaining Turki and Yabu horses, namely Rs.8 a month.

Proceeding on these several assumptions the stipend of the ahadis with different number of horses may be worked out as follows:

	Turki		Yabu		Personal	Total
chahār-aspa	2 x 14	+	2 x 12	+	8	55
sih-aspa	1 x 14	+	2 x 12	+	8	46
do-aspa	1 x 14	+	1 x 12	+	8	34
yak-aspa	0 x 14	+	1 x 12	+	8	20

If we now multiply the number of ahadis in different categories with these rates, we may get an estimate for their

1. Āin, I, p.187.

total salary bill in rupees for the month, as follows:

chahār-aspa	:	55 x 741	=	40,755
sih-aspa	:	46 x 1,322	=	60,812
do-aspa	:	34 x 1,422	=	48,348
yak-aspa	:	20 x 950	=	19,000
		Total		Rs.1,68,915

This in turn would give 8,10,79,200 dāms per annum as the total expenditure on the salary bill of the ahadis.

PIYĀDAGĀN

We may now attempt an estimate of the expenses incurred by the Mughal administration in meeting pay-claim of another category of Imperial servants, grouped by Abul Fazl under the designation of piyādagān (foot-retainers). This broad category covered not only the foot-soldiers, musketeers, archers and swordsmen but also clerks, gate-keepers, palace guards, wrestlers, runners, spies, palanquin-bearers and slaves. Even some of the carpenters, diggers, blacksmiths and water-carriers were counted among the foot retainers. Abul Fazl thus appears to have counted all the Imperial servants other than officials, who were not horsemen,

among the piyādagān.[1]

The Āʾīn-i Akbarī gives the pay-scale for almost all the categories of foot-retainers; and for some categories it also mentions the total number of employees. Since the number is not given for all the categories it is not possible to compute the expenditure on all the foot-retainers. Nevertheless, the amount spent at least on some major categories of the piyādagān can be estimated with some degree of confidence.

First of all, there was a sizable number of musketeers (bandūqchīs). Abul Fazl gives their number as 12,000 and devotes a separate chapter (Āʾīn-i Māhwāra-i bandūqchī) to the statement of the pay-scales sanctioned for them.[2] Since the musketeers belonged to the category of the piyādagān the same pay-scales are repeated again in the chapter on foot-retainers.

The musketeers were divided into various grades; and their pay-scales varied accordingly. There were four grades of mīr-dahs (captains of 10 musketeers) with monthly salaries of 300; 280; 270 and 260 dāms. For the ordinary musketeers,

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1. All the information from the Āʾīn used in this section is drawn from the chapter on the foot-retainers in the Āʾīn-i piyādagān, (Āʾīn, I, pp.188-90), if not otherwise indicated.

2. Āʾīn, I, p.127. Shāhjahān's official historian, Lāhorī gives 40,000 as the number of "unmounted musketeers, gunners, cannoniers, and rocket-throwers", of whom 10,000 were in attendance at the court and the remainder ('3,000' in the text being an obvious error for 30,000) posted "in the provinces and forts". (Lāhorī, II, p.715). Presumably, the number of musketeers and foot-soldiers in the artillery increased substantially between 1595-96 and 1646-47, the year for which

there were five grades, each of which was further divided into three classes. The rates for all of these varied from 250 to 120 _dāms_ a month.

While we have no means of finding out the precise number in each grade, it seems reasonable to assume that out of 12,000 musketeers the number of _mīr-dahs_ was 1,090 and the remainder were 10,910 being ordinary musketeers, since this would give us the ratio of 1:10 between them.

As noted above the rates were not uniform for all the _mīr-dahs_, and the ordinary musketeers. We may still estimate the total expenditure, by taking the average rates, as follows:

Mīr-dah	: 1,090 x 277.5	=	3,02,475
Ordinary	: 10,910 x 180	=	19,63,800
	Total		22,66,275 _dāms_/month

The entire salary bill for the musketeers, therefore, may be estimated at 2,71,95,300 _dāms_/year.

One thousand _darbāns_ (gate-keepers) were employed to guard the royal palace. The pay of the _mīr-dahs_ was specified in five grades, ranging from 200 to 120 _dāms_ per month. Assuming that they were evenly divided into the various grades,

the average monthly rate for the mīr-dahs should have been 150 dāms. The maximum rate for an ordinary darbān was 120 dāms while the minimum was 100; that is on an average the ordinary darbān received 110 dams a month. There should have been 90 mīr-dahs out of 1,000 darbāns. The salary-bill of the gate-keepers may, therefore, be estimated as follows:

Mīr-dah	:	90 x 150	=	13,500
Ordinary darbāns	:	910 x 110	=	1,00,100
Total			=	1,13,600 dāns/month.

Or 13,63,200 dāms per year.

There were a thousand guards known as khidmattiyas to watch over the environs of the royal palace. They derived their name from the title of khidmat rāi given to their chief. There were four ranks among them; the panjāhī and bistī (captains over 50 and 20) received 200 dāms a month; dah-bāshīs (captains of over 10) 180 to 140 dāms; and the rates for others varied from 120 to 110 dāms a month. It is again not possible to determine the numbers under the various ranks. However, allowing the average salary of the dah bāshī as 160 dāms; and for others 115 dāms a month (the average of the sanctioned rates), we get an estimate that would be rather on the lower side, since the rates for the panjāhīs and the bistīs

are not taken into account. The estimated amount required for paying the khidmattiyas would then be:

The dah bashi	:	90 x 160	=	14,400
Others	:	910 x 115	=	1,04,650
Total				1,19,050 dams/month.

Or 14,28,600 dams per annum.

For supplying intelligence and conveying orders over distances the Mughal administration employed [illegible] called Mewrahs; they worked as spies as well. Firishta describes the mewrahs and their remarkable speed and says that 4,000 of them were employed in Akbar's service.[1] Ferishta says that the mewrahs rode horses, but Abul Fazl classifies them among the foot-retainers and gives their number as 1,000 only. He adds that their grades and pay-scales were similar to those of the khidmattiyas. Accepting Abul Fazl's figures rather than Ferishta's, the expenditure on the mewrahs may be put at 14,28,600 dams a year.

The Ain says that the number of swordsmen in the Empire exceeded one hundred thousand, but only 1000 were

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1. Firishta, I, p.272.

employed in Imperial service. The highest monthly pay allowed for them was 600 dāms, and the lowest 80 dāms. While there is a wide disparity between the rates, we may take the mean of the two extreme limits as applicable to all, for the purpose of estimating the total salary-bill for the swordsmen The annual expenditure would on this basis work out at (340 x 1000 x 12 =) 40,80,000 dāms.

The palanquin-bearers (kahārs) too were among the piyādagān; their leader (sar-guroh) received 384 to 192 dāms per month, while the others were paid from 120 to 160 dāms. The Āīn says that 'some thousands' were in service. Taking some to mean a figure above 2,000, we have rather arbitrarily taken the number to be 3,000 and treating all as ordinary, and allowing the average salary for all, a rough estimate of the expenditure is offered as (3000 x 140 x 12 =) 50,40,000 dāms/year.

While including clerks and wrestlers in its chapter on foot-retainers, the Āīn sets out their pay-schedules; but their numbers are not given. Rather curiously the slaves too are treated as foot-retainers by Abūl Fazl. Some of the slaves appeared to have served as artillerymen as well. Matchlocks were handed over to them after they had been manufactured in the Imperial workshops.[1]

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1. Āīn, I, p.126.

The number of foot-soldiers is not given while their salary is stated. Their salary bill which must have constituted the major portion of the total expenditure on the foot retainers cannot, therefore, be calculated.

Numbers are not given for other categories of foot-retainers, such as carpenters, blacksmiths, diggers, water-carriers and archers. The amount spent on them could not have been negligible since even for setting up one camp 500 diggers, 100 water-carriers, 50 carpenters, 30 leather-workers and 150 sweepers were required.[1]

The foot-retainers also worked in several other Imperial establishments. The Āīn gives the minimum and maximum rates of pay of the foot-retainers in each establishment, but it is not possible to determine their numbers.

The total expenses on the salaries of musketeers, gate-keepers (darbāns), palace-guards (khidmattiyas), runners (mewrahs) swordsmen (shamshīrbāz) and palanquin-bearers (kahārs) that we have been able to estimate on the basis of some quantitative evidence add up to 4,05,35,700 dāms/year.

The question arises whether the foot-retainers for whom this estimate is offered covers all such persons employed in the Imperial Establishment. On the purely military side, for example, there were gunners (topchīs) (besides musketeers), and

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1. Āīn, I, p.42.

archers; there were other retainers, like blacksmiths, diggers, water-carriers, etc., working at the Imperial Camp (apparently those not employed in the Building Department or other departments of Imperial Establishment, the payments of whose staff are included in estimates offered in Chapter XI). For such staff left out in our estimates for certain categories of foot-retainers and for those not covered by estimates in Chapter XI, we may assume a scale of expenditure amounting to about half of what was spent on the pay of the categories already covered. The estimated sum of 4,05,35,700 dāms arrived at above may thus be increased to 6,00,00,000 dāms so as to represent a comprehensive figure for expenditure on all "foot-retainers" outside those covered under Chapter XI.

II

The elaborate account of the Imperial animal establishment given by Abúl Fazl, tempts one to seek ways of making an estimate of expenses incurred in the Imperial stables. Though part of the expenses may be characterised as the cost of conspicuous consumption, for the major portion these expenses must still be regarded as part of military expenditure. The Āīn furnishes detailed descriptions of the stables of elephants, horses, camels, bullocks and mules.[1] These animals were kept not only for display, but also - and, perhaps, mainly - for use in marches and battles, and for military transport. The game-animals such as cheetahs, deer, pigeons, etc., are dealt with separately in the Āīn,[2] and will be treated by us under Household Expenditure in Chapter XI.

1. Āīn, I, pp.128-53.
2. Ibid., 205-14, 216.

Abul Fazl devotes separate sections to classification of the animals, their diet, furniture, apparel, trappings and attendants.

HORSES

To begin with the most important animals from the military point of view, the horses were broadly classified into two categories, (1) khāsagī, horses intended or available for the Emperor's personal use; and (2) ghair-khāsagī, other horses in the Imperial stables.[1] The ghair-khāsagī horses were placed in stables of the royal princes,[2] stables of the khānazād (stud-bred) horses and the rahwār (courier) horses. There were apparently two criteria on whose basis the Imperial stables were classified: First, the number of horses in a stable,

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1. Āīn, I, p.141. The Emperor rode ghair-khāsagī horses too, but only occasionally (Āīn, I, p.145).

2. These horses appear to be different from those which the princes were required to mainatain against their mansabs. Even a dih-hazārī, the holder of 10,000 (the mansab held by Prince Salim) had to maintain some horses of inferior breeds, such as tāzī and jangla (p.180); but the Imperial horses assigned to the princes' stables were of such superior breeds and high value that they were regarded next to the khāsa horses only. The general rule was to make good any deficiencies in the khāsa stables from among the horses assigned to the princes' stables (p.145). After the death of Prince Murad, horses of his stables were incorporated into the khāsa stables.

the largest being chehal-aspī (containing 40 horses) and the smallest dah-aspī (10 horses).[1] Secondly, the price of a horse: For example, some stables were designated haftad-muhrī, because horses of the value of 70 muhrs each were kept there.

Both the quantity and quality of food allowed per horse as well as the trapping, apparel and furniture varied from stable to stable. The stipends of various attendants too were different for different stables.

Horses belonging to the khāsa stables were allowed a larger and more expensive diet; and the wages of the attendants too were highest here. Usually, the quantities of various commodities allowed as part of diet for the various kinds of horses are specified; but the prices of the articles or total expenses thereon are not furnished. Similarly, the expenditure on the harness per horse in the various stables cannot be determined. For many of the offices in the Imperial stables, it is simply stated that their holders were mansabdārs ahadīs or piyādas;[2] but their emoluments or ranks are not given.

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1. Āīn, I, p.141.

2. Āīn, I, p.144.

Thus, although the data provided are at first sight abundant, there are yet so many lacuna that the precise monthly expenditure on horses belonging to the various Imperial stables cannot be easily calculated. Even if we could work out some estimate for a stable, we face the further difficulty that the number of stables of various kinds is not given.

The one possible means of working out expenditure on horses in Imperial stables is then to go back to our calculations for expenditure on the mansabdārs' horses. The Āīn provides us with the amounts of individual items of expenditure on those horses as well as the monthly allowances sanctioned for them.[1] By comparing the amounts and quantities allowed on similar items for horses of Imperial stables, we can estimate the difference in the scale of expenditure sanctioned for the Imperial horses, in terms of that on the mansabdārs' horses Since the actual amount of expenditure allowed on the latter is known to us, we can then work out by simple arithmetic, the expenditure allowed on Imperial horses.

In the Imperial stables the quanttity and quality of food varied according to the breed or value of the horse.

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1. Āīn, I, pp.176-7.

However, grain fodder (dāna) was allowed at a uniform daily rate of 7½ sers. The quantity of sugar and ghī, for those to whom these were allowed, was ½ to 1½ sers and 30 to 50 sers a month respectively. Two dāms a day were sanctioned for hay.[1] The quantities sanctioned for the mansabdārs' horses were 5 to 6 sers of grain fodder for the day, 30 to 60 dāms a month for sugar, 10 to 75 dāms a month for ghī and 30 to 90 dāms a month for hay.

While the only attendant allowed for a mansabdār's horse was a groom (sāīs), the Imperial stables were far more lavishly staffed. Besides the groom, there were 1½ dozen posts of other servants in each of the Imperial stables. The khāsa stables had even a sipandsoz - a person whose duty was to burn certain seeds to gaurd against the evil eye. On the other hand, as we have noted, some of the functionaries were mansabdārs, and quite a few attendants got their salaries on the rolls of ahadis or piyādas.[2] The attendants were not only more numerous than allowed to the mansabdārs on their horses, but were also paid at higher rates. The wages of a groom in the Imperial stables ranged between 50 and 85 dāms a month, for taking care of one horse, while the amount sanctioned for the groom, attending a mansabdar's horse was between 45 and 63 dāms a month.

1. Āin, I, pp.141-2.

2. Ibid., pp.143-4.

The expenditure per horse on harness is, as mentioned earlier, difficult to work out. The annual allowance on horse-apparel (harsāla-poshish) ranged from 155½ to 227¼ dāms.[1] It excluded the costs of ornaments and jewels etc. The amount sanctioned to the mansabdārs under the head kharch-i yarāq-i asp was 8¾ to 70 dāms a month. The upper limit of allowance to mansabdārs on this account appears rather high in comparison to 227¼ dāms per annum allowed for even the khāsa horses; but the yarāq-i asp included items which were not a part of horse-apparel of Imperial horses, namely, pāy-band (leg fastening), mekh (iron pegs) etc.[2] Moreover, the cost of jewels and ornaments used in the various parts of horse-apparel is not specified, though it must have been very high.

It is obviously not possible to determine the precise difference between the cost of maintenance of a horse in the Imperial stables and that of the horses of a mansabdār, given the b lacuna in our information. But the disparity between the wages for the grooms and the quantity of grain-fodder allowed may serve as a rough index of the difference in the expenditure.

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1. Āīn, I, p.142. These amounts (except 227¼ dāms, for which no break-down is offered) exactly equal the sums of the costs of different articles given under clothing; but the prices of items charged twice a year are not counted twice. The totals therefore appear more to be the value of the total out-fit rather than the total annual expenditure on horse apparel.

2. Āīn, I, pp.176-7.

As we have seen, the wages of the grooms employed by the Imperial establishment were 10 to 26% higher than the stipend allowed for the groom employed by the *mansabdārs*. Moreover, the Imperial horses were allowed 20% more grain-fodder than the horses belonging to the *mansabdārs*. Keeping in view the higher expenditure on all other heads (with the remotely possible exception of harness) in the Imperail stables, we may venture to estimate the Imperial expenditure on a horse as at least 20% more than that allowed to the *mansabdārs* for a horse. If anything, this perhaps errs on the side of understatement in respect of expenditure on the Imperial horses.

If we could now work out the actual number of the horses of various breeds in the Imperail stables, we should be able to estimate the expenditure on the maintenance of horses, by allowing for each breed a rate of expenditure per horse that is 20% above the rate sanctioned for that breed under *mansabdārs*. Abul Fazl says that Imperial stables were continually enlarged, while at the same time many horses were given away; the total number present in the Imperial stables remained at about 12,000.[1] This figure is strikingly corroborated by Hawkins, Firishta and Pelsaert (c.1626), all saying

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1. *Āīn*, I, p.140.

that Akbar had 12,000 horses in his stables at his death.[1]

But we require also a break-down according to breeds. Such a break-down is provided only by Hawkins[2] and Pelsaert,[3] who give the following rather divergent figures:

Hawkins		Pelsaert	
Persian	4,000	Persian	3,200
Turkish	6,000	Turkish	5,970
Kashmiri	2,000	Cutch	2,540
		Sind	210
		Mares	120

It will be seen that the two enumerations practically agree as to the number of Turkish horses, which comprised more than three-fourths of Akbar's stables. In respect of the Persian horses, the difference, though noticeable, is not very substantial, Hawkins setting their number at a third of the total and Pelsaert above a quarter. The main difficulty is about the identification and numbers of the remaining breeds. According to Hawkins these horses numbering 2,000 were from

1. Hawkins, p.103; Firishta, I, p.272; Pelsaert, A Contemporary Dutch Chronicle of Mughal India, ed. & tr. Brij Narain & S.R. Sharma, Calcutta, 1957, pp.34-5.

2. Hawkins, p.103.

3. Pelsaert, Chronicle, & c., pp.34-5.

Kashmir; but Pelsaert describes 2,540 of them as of 'Cutch'. The _Áin_'s own testimony is not of any help, since it simply mentions horses of Kashmir as well as Cutch among the Imperial horses.[1] For our present purpose, however, this last discrepancy is not very material, since in sanctioning the allowances for the maintenance of Indian horses no distinction was made between Kashmir and Cutch horses. Our calculations thus remain unaffected, whether we follow Hawkins or Pelsaert.

Though the total expenditure, then, would not be very different on the basis of the numbers of horses of the different breeds given by either Hawkins or Pelsaert, the latter's figures being more detailed inspire greater confidence; and we are perhaps on stronger ground in making our calculations on their basis.

Among the seven classes into which the horses of the _manṣabdārs_ were divided, three, namely, Arabi, Iraqi and Mujannas, came from Iran and the surrounding region, and one may therefore take the average of the rates allowed for these three breeds as applicable to the category collectively designated

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1. _Āīn_, I, p.140.

'Persian' by Hawkins and Pelsaert. There is, of course, no problem of identification involved in the case of 'Turki' or Turkish horses; in the classification given in the Āīn, they constitute a separate class. The two classes of superior Indian breeds were Yabu and Tazi.[1] We may take Pelsaert's 'Cutch horses' to correspond to the Yabu and Tazi categories. The rates allowed for jangla may be applied to the remaining categories (210 'Sind' horses and 120 'Mares') listed by Pelsaert.

Taking the rates on the different breeds as outlined above, and enhancing them by 20%, to convert the rates on mansabdārs' horses into those on Imperial horses, we get the following figures:

	Rates per month in dāms	Number of Horses (Pelsaert)	Total expenditure
Persian	784	3,200	25,08,800
Turkish	576	5,970	34,38,720
Cutch	432	2,540	10,97,280
Sind & Mares	288	330	95,040
		Total	71,39,840

1. The use of word Tazi (lit. Arab horse) for an Indian breed which judging from the sanctioned allowances was not of the most superior Indian breed either (since the allowance for 'Yabu', is higher) is a little puzzling. It is a pity that these problems regarding breeds of horses have not yet been elucidated in any modern work.

Converted into expenditure per annum, the expenses on the Imperial horses should have amounted to 8,56,78,080 dāms.

ELEPHANTS

The Imperial elephants were divided on the basis of their physical characteristics and age into seven classes, viz., mast, shergir, sada, karrah, manjhola, phundarkiya and muwakil. Female elephants constituted a separate class.[1]

While the same kind of fodder was allowed for all the elephants except the khāsa elephants (deemed to be the Emperor's 'personal' animals), the quantity varied from class to class. The number of attendants allowed too differed for various classes.[2] The data in the Āīn enable us to calculate the expenditure on fodder and attendants for each elephant under all the classes. But while Abu'l Fazl describes the elephant trappings at length, he does not specify the cost of all the items.[3] Only the minimum cost of trappings can, therefore, be calculated.

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1. Āīn, I, p.133.
2. Ibid., p.134.
3. Ibid., pp.135-8.

The following table gives the average expenditure on diet,[1] servants and the minimum amount for trappings,[2] for elephants belonging to the seven classes of teeth elephants and four classes of female elephants.

	Expenditure in dāms/month			
	On diet	on servants	on harness	Total
Mast	891	887	183.5	1961.5
Shergir	756	778	183.5	1717.5
Sada	621	662	183.5	1466.5
Manjhola	540	550	136.0	1226.0
Karrah	441	437	136.0	1014.0
Phunderkiya	324	265	81.5	670.5
Muwakkil	216	215	81.5	512.5
			Average	1219.76
Female Elephants				
Kalan	522	355	77.5	954.5
Miyana	414	298	77.5	789.5
Khurd	265.5	172.5	77.5	515.0
Muwakkil	145.8	172.5	77.5	395.8
			Average	663.7

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1. The grain-fodder (dāna) has been converted at the rate of 12 dāms per man (Āīn, I, p.176).

2. Among the articles included in the harness, Blochmann's text and Br. Mus. MSS 6552 give 'one man of grain-fodder and 10 sers of iron' (yak man dāna-o-dih ser āhan). The mention of grain-fodder is curious and quite out of context here. Br. Mus. MS. Add 7652, however, gives 'one man, 12 sers, iron' (yak man-o-doāzdih sir āhan). I have accepted this reading, which certainly appears more reasonable. It seems that the scribe of some very early MS misread dāna-o-dih for doāzdih. Incidentally, one here gets the price of iron, which is fixed at 2 dāms per man (Āīn, I, p.138).

To work out the Imperial expenditure on elephants, we should now have the number of elephants belonging to each class.

Abúl Fazl says that there were 5,000 Imperial elephants in all, each having a separate name.[1] This accords with the number of 5,000 mentioned by Monserrate for the Imperial elephants.[1a] According to Firishta, while the number of Imperial elephants under Akbar was never below 5,000, it never exceeded 6,000 either.[2] Pelsaert gives a little higher figure, viz., 6,751.[3] Unluckily, no break-down according to classes is provided in any of these sources. Abúl Fazl and Pelsaert agree, however, on the number of the khāsa elephants only: Abúl Fazl has 101,[4] and Pelsaert 100 (the latter describing them as elephants of extraordinary beauty and excellence.)[5]

It seems reasonable to accept the lower figure of 5,000 given by Abúl Fazl for the total number of elephants

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1. Āīn, I, p.161.
1a. Monserrate, p.89.
2. Firishta, I, p.272.
3. Pelsaert, pp.34-5.
4. Āīn, I, p.138.
5. Pelsaert, p.134.

and the figure of 101 for the khāsa elephants. Since we have no means of finding out the number of elephants in each of the 7 classes listed by Abūl Fazl, it is not possible to compute the expenses incurred on the Imperial elephants with any degree of exactitude. However, to get a rough estimate, we may assume that the number of male elephants was equal to that of female elephants. This assumption seems fair keeping in mind the preference for tuskers and the more powerful male elephants which were better suited for way purposes. We may make a further assumption that the ordinary male elephants were evenly divided into all the classes and so work out the total amount of expenditure. It is not possible with the data provided by Abūl Fazl to work out the cost of maintenance of a khāsa elephant. Nevertheless, it will not be far wrong to assume that the expenses on a khāsa elephant could not have been less than 10% higher than those on a mast elephant.

Proceeding on the basis of these assumptions, the monthly Imperial expenditure on elephants may be calculated as follows:

Khāsa elephants	:	101 x 2,157.45 =	2,17,900
Male ,,	:	2,450 x 1,219.76 =	29,88,412
Female ,,	:	2,450 x 663.7 =	16,26,065
		Total =	48,32,377 dams/month

Since we have taken into account only a part of the expenditure on trappings and have assumed a rather inferior composition for the Imperial elephants than what could have been actually the case, our total figure represents the lower limit for the expenses incurred on the Imperial horses.

The minimum expenditure per annum would then be 579,88,524 dāms, which amounts to 1.43 % the jama' of the Empire.

CAMELS

The other transport animals in the Imperial stables were camels, mules and oxen. Camels were used as courier-animals along with horses.[1] Though the Āīn gives a fairly detailed account of expenditure on these animals, it is silent about their numbers. Pelsaert, while offering an inventory of Jahangir's inheritance, gives the numbers of camels, mules and oxen as well. According to him there were 6,223 camels in Akbar's stables.[2]

As in the case of horses, it seems difficult to work out the average expenditure on a camel in the Imperial stables.

1. Āīn, I, p.146.

2. Pelsaert, pp.34-5.

The quantity of grain-fodder (dāna) allowed, varied according to the breed and age of the camel. The camels were divided into strings or qaṭārs of 5 camels each; each qaṭār was under the charge of a sārbān (camel-driver). Abul Fazl gives four rates for sārbāns without specifying the number in each grade. Over the sārbān were placed bistopanjis (having charge of 5 qaṭārs and 4 sārbāns), the panjāhī (commanding 10 qaṭārs and 9 sārbāns), and the pānsadī (having 100 qaṭārs and 99 sārbāns under him). The bistopanji and the panjāhis were under the pānsadī.[1] Again the numberso of these officials are not given though their salaries are recorded. The pānsadīs were usually mansabdārs.[2]

The rates given here seem to be those worked out when the ser had the weight of 28 dāms. The quantity of grain-fodder is mentioned expressedly in terms of a ser of 28 dāms, but Abul Fazl says that these quantities were changed when the weight of the ser was raised to 30 dāms. The revised quantities are, however, not given.[3] This suggests that the amounts mentioned here are to some extent out-dated. This impression

1. Āīn, I, pp.148-9.

2. Ibid., p.149.

3. Ibid., p.147.

is further strengthened by the Āīn's own admission that the amounts sanctioned for the harness of camel were so outdated that the contractors were incurring losses, and these were therefore allowed to be calculated according to the prices prevailing at the time.[1]

It is then not safe to estimate the Imperial expenditure on camels on the basis of data provided in the Āīn. But allowances sanctioned for mansabdārs' animals could again provide us with a basis for estimating the expenditure on Imperial camels.

The grain-fodder allowed to a full-grown Indian camel (lok) in the Imperial stables was 7 sers a day (7½ sers in terms of ser of 28 dām-weight) and 2 to 1½ dams a day for hay for 8 months in a year.[2] The mansabdārs' camel was allowed daily 6 sers of dāna and 1 dām for hay.[3] The average salary of a sārbān employed in the Imperial stables was 63 dāms a month;[4] the mansabdārs were given 60 dāms a month for the sārbān, the only attendant allowed.[5] In this way the Imperial

1. Āīn, I, p.148.
2. Ibid., p.147.
3. Ibid., p.178.
4. Ibid., p.149.
5. Ibid., p.178.

expenditure on these three essential heads works out at 161 dāms a month, while the corresponding figure for the mansabdārs' camel was 144 dāms: the Imperial expenditure on these heads was therefore about 12% (11.81%) higher than the amount sanctioned to the mansabdārs. The expenditure on the salary of the other officials, viz., bistopanji, panjāhī and raībārī (trainer) etc., was in addition to this, the mansabdārs not being allowed any functionaries corresponding to these officials.

We would, therefore, not perhaps be far wrong in assuming that the Imperial expenditure on a camel was at least 15% higher than that allowed to the mansabdārs.

Pelsaert tells us that out of the 6223 Imperial camels 523 were dormatae (single-humped camels) and the remaining 5700 were 'camels of this country'. [1]

The amount sanctioned for the maintenance of a mansabdār's camel was 240 dāms a month.[2] Enhancing it by 15% we get 276 dāms. If we further assume, rather arbitrarily, that the expenditure on the 'dormatae' camel was 20% higher than the allowance sanctioned for the ordinary camel to the

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1. Pelsaert, Chronicle, & c., pp.34-5.
2. Āīn, I, p.178.

mansabdārs, we can attempt the following estimate of monthly expenditure on Imperial camels:

'Dormatae'	523 x 288	=	1,50,624
Other camels	5,700 x 276	=	15,73,200
			17,23,824 dāms

This gives us an expenditure amounting to 2,06,85,888 dāms per annum.

OXEN

The oxen in the Imperial establishment were classified on the basis of their functions. The quality and quantity of diet allowed were in accordance with this classification. The quantity of grain-fodder allowed was between 5 and 6¼ sers; 1 to 1½ dāms were given daily for hay.[1]

The wage sanctioned for the herdman was 4 dāms a day. But 18 of them were allowed the higher rate of 5 dāms. In the khāsa stables one hersman was charged with the care of 4 oxen; in other stables one was allowed for six.[2]

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1. Āīn, I, p.147.
2. Ibid., I, pp.148-9.

On the basis of these data, the average expenses upon each ox in the Imperial stables work out at 107 dāms a month. The amount allowed to the mansabdārs for an ox was 120 dāms a month; though no allowance was made for the herdsman and the amount given for grain fodder and hay was only 66 dāms a month, as against 87.5 dāms allowed in the Imperial stables for the same items.

The rates allowed to the mansabdārs were higher probably on account of the two increments, one of 38 dāms[1] and the other of 10 dāms a month which were apparently given to keep up with the change in prices between the 18th and the 39th regnal years.

In so far as the amounts sanctioned in the case of Imperial stables, do not include such enhancements, they would seem to relate to an earlier date. As we have seen they were fixed when the ser was of 28 dām-weight[2] and on the Āīn's own administration were low and out of date.[3]

To make the rates applicable to the 40th regnal year we may then allow the same enhancement in the case of Imperial

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1. Āīn, I, p.178.
2. Ibid., p.147.
3. Ibid., p.148.

rates for oxen: This would mean a sum of 155 dāms a month for the average expenditure on an ox in the Imperial stables.

Pelsaert's figure of 7,000 for oxen belonging to the Imperial stables seems reasonable, for the Āīn says that 600 carts (ʿarāba) were employed to fetch fuel for the Imperial kitchen and 200 to transport material for the building establishment.[1] Since as Abūl Fazl tells us further, one cart required four oxen, at least 3,200 oxen had to be employed on these 800 carts alone; and there must have been other demands upon oxen,[2] and the need to keep a number of them in reserve, so that the figure of 7,000 is by no means excessive.

Since Pelsaert does not offer any break-down of the breeds of oxen, we can only estimate the Imperial expenditure on oxen by applying the rate worked out by us (viz., 155 dāms) uniformly to all the 7,000 oxen. This gives us (7000x155x12=) 1,30,20,000 dāms per annum.

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1. Āīn, I, pp.151-2.

2. For example, many oxen must have been needed for pulling the guns of the artillery of the Stirrup (Āīn, I, 119).

MULES

The Āin suggests that mules in the Imperial stables were native bred as well as imported. The amount spent upon them varied according to whether they were indigenous or foreign. Pelsaert does not follow this or any other classification while giving the number of mules. In any case, the number of mules given by him is so small (260) that an attempt to compute the expenditure on them on the basis of the detailed data in the Āin, would seem to be an unnecessary refinement, especially when a simpler mode of calculation is available. Abul Fazl says that in fixing the allowance paid to the mansabdārs for animals kept by them, mules were reckoned formerly as equal to Tazi horses but now only as equal to jangla horses.[1] On this basis we may apply the rate for a jangla horse in the Imperial stables as calculated by us (viz. 264 dāms a month).

The annual expenditure on mules by the Imperial administration would then come to (260 x 264 x 12 =) 8,23,680 dāms per annum.

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1. Āin, I, p.179.

COSTS OF PURCHASES

In addition to the cost of maintenance, the total Imperial expenditure on animals should have also included the amounts spent on their purchase. The information on this matter is so scarce that only a very tentative estimate can be attempted.

Abul Fazl tells us that the merchants brought horses to the court from various countries; droves upon droves were brought from Iran and Central Asia.[1] From Abul Fazl's description it appears that commerce in horses was conducted at least partly under State control. A place was assigned, where except for a few trusted or privileged merchants, all the horse dealers were required to stay along with their horses; and an official, designated amin-i karvansara, was appointed to keep a watch over them. Clerks were employed to keep records and experienced men to determine prices.[2] From Monserrate's account, it transpires that in spite of all these controls and restrictions, there was no State monopoly and the horses were sold through open auctions. The price-money was counted in public to avoid any 'suspicion of

1. Ain, I, p.140.

2. Ibid., p.141.

oppression'. The Emperor, or rather his officials, purchased horses in the same manner as private bidders.[1]

To compute the amount spent on the purchase of horses we should know the number of horses bought by the Emperor in a year as well as the price of each of them. This information is not directly available. However, we may resort to indirect means to build-up an estimate.

The normal life span of a horse in India was held to be 30 years;[2] but its working life, according to a 17th century source, was 12 years.[3] Assuming that all the horses in the Imperial stables when purchased were in their prime and that they thus spent no less than 12 years in the Imperial stables, one would have to infer that at the very least, 1/12 of the total strength of the horses needed to be replaced every year. If the horses, on the average, spent less than 12 years in the Imperial stables, as is rather more likely (being perhaps given away in gifts when they were past

1. Monserrate, p.208.

2. Āīn, I, p.146.

3. Anonymous, Farasnāma (MS. Maulana Azad Library, AMU, Subhanullah Collection, 616/3, p.3). It seems to be written in the 17th century since it refers to Jahāngīr as Jannat-Makānī; the use of this posthumous title suggests proximity to the reign.

their prime), the proportion replaced every year should have been higher. On the other hand, the court received a number of horses in gifts and offerings, without having to pay anything. In the net, therefore, probably the horses purchased every year might be deemed to have amounted to about a twelfth of the total. We would still be ignoring mortality in wars; but possibly by 1595-6, Imperial horses were seldom involved in actual fighting. Since, as we have seen Akbar's stables are said to have contained about 12,000 horses, the number annually purchased should have been about 1,000.

In order to use this figure for making an estimate of the actual amount spent in purchasing horses, one would need information on prices the different kinds of horses fetched. The Āīn rather unhelpfully gives the range of prices of horses as from rupees 2 to 500 muhrs.[1] However, since prices of horses too were used as the criterion for the classification of stables we may roughly establish a narrower range of prices actually paid for horses bought for the Imperial stables.

We find that among the Imperial stables there were stables containing dih-muhrī as well as haftād-muhrī horses.

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1. Āīn, I, p.146.

These excluded the khāsa stables, the stables of the princes, courier-horses and the khanazāds. This suggests that the prices of the horses in the Imperial stables varied normally from 10 and 70 muhrs. Since there seems no means of determining how many horses belonged to the various price-categories, within this range, we can only resort to taking the mean between 10 and 70, namely 40 muhrs. This again has a lower bias since one should expect the majority of the Imperial horses to be of superior breeds.

With these assumptions which appear arbitrary but probably err on the lower side, we may compute the annual Imperial expenditure on the purchase of horses as follows:

Since 9 rupees went to a muhr[1] and a rupee was equal to 40 dāms, the average price of a horse should have been (40x9x40=) 14,400 dāms. The price of 1,000 horses was therefore 1,44,00,000 dāms.

While this or a larger amount of money must have been spent annually on horses, it may be remarked in passing that at least a small part of this expenditure was recovered from stable employees. There were firm regulations about fines to

1. Āīn, I, p.27.

be imposed on officials and attendants of the stables, in case of the death of a horse in their charge.[1] But the actual amounts so recovered cannot be worked out, and did not probably amount to anything more than a minute part of the prices of horses purchased.

It seems that Akbar's administration did not spend much money on the purchase of elephants. Elephants were either caught in organised hunts, or received in tribute or war booty.[2] We also have evidence that some time the 'land-revenue' too was paid through elephants in Central India.[3]

Abul Fazl provides detailed prices for each breed of camels,[4] but since we do not know the break-down of Imperial camels under various breeds we may again take the unweighted average of these prices. The natural life of a camel was 25 years[5] but their active life was 12 years only.[6] We may suppose that the Mughal administration had to purchase 519

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1. Āīn, I, pp.145, 164.
2. Ibid., p.206.
3. Ibid., II, p.456.
4. Ibid., I, p.150.
5. Ibid., p.150.
6. Watt, Dict. of Economic Products of India, Vol. II, p.57 (c 219).

camels annually to maintain a corps of 6,223 camels. Taking 5.5 *muhrs* as the average price, the expenditure on the purchase of camels works out at (5.5 x 9 x 40 x 519 =) 10,26,795 *dāms* per annum.

Though Akbar is said to have bought a pair of oxen at as high a price as Rs.500, the usual price of an ox, around Delhi was Rs.10.[1] The active life of an ox too may be assumed to be 12 years.[2] To maintain the strength of 7,000 oxen in the Imperial stables the administration must have had to add 584 ($= \frac{700}{12}$) oxen each year. The expenditure thus works out at (584 x 10 x 40=) 2,33,600 *dāms* per annum.

For mules Abūl Fazl gives the normal life-span as 50 years, and the price of the most superior one in the Imperial stables as Rs.100.[3] But neither the average price nor the working life is specified. In any case the number of mules (for which we are indebted to Pelsaert) is so trifling (viz. 260) that it would be unnecessarily punctilious to estimate the annual cost of their purchase. The amount would have

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1. *Āīn*, I, p.150.
2. Watt, V, pp.576, 667.
3. *Āīn*, I, p.152.

been so small as hardly to affect the total expenditure on animals in the Imperial stables.

While summing up below the estimates of the annual expenditure on animals in the Imperial establishment, we must underline the unevenness of the quality of data used, which is even more obvious here than in the quantification attempted in respect of other departments of Imperial finance. What one can say in one's defence is that the estimates offered are consistent with the information of the very varied kind that we have, and result in an over-all total that does not seem unreasonable.

A. Maintenance

Horses	8,56,78,080	
Elephants (minimum)	5,79,88,524	
Camels	2,06,85,888	
Oxen	1,30,20,000	
Mules	8,23,680	
Total maintenance expenses (dāms/year)		17,81,96,172

B. Cost of purchases

Horses	1,44,00,000	
Elephants	-	
Camels	10,26,795	
Oxen	2,33,600	
Total cost of purchase (dāms/year)		1,56,60,395

Total annual expenditure on animals (dāms/year) = 19,38,56,567

III

Arsenal and Armour:

In his chapter on matchlocks, Abul Fazl says that these were manufactured in the Imperial workshops (kārkhāna-i khāsa) or were purchased; many also were received as presents.[1] This might have been true also of other weapons and articles of armour. Whatever the extent of material received gratis, through gifts, the expenses incurred on the Imperial arsenal and armour could not have been inconsiderable. Though Abul Fazl devotes separate chapters to the arsenal, guns and matchlocks,[2] the data given by him are not of much help in estimating the annual expenditure incurred upon them. Fortunately, Pelsaert gives the value of artillery pieces, hand weapons and articles of armour which Akbar left behind at his death.[3] According to his list the cannon, muskets, lead for shot, gun-powder and other munitions of war were valued at Rs.85,75,971; armour, sheilds, poniards, bows, arrows and similar weapons, at Rs.75,55,525; and gold embroidered cloaks for all kinds of royal armour, at Rs.50,00,000. In treating

1. Āin, I, p.126.

2. Ibid., pp.118-27.

3. Pelsaert, A Dutch Chronicle of Mughal India, p.33.

these values for purposes of calculating actual costs incurred on them, I assume that a scaling down by 20% would first be necessary to give us the actual costs. Since it is obvious from Abul Fazl's account that the number of weapons given away in gifts was quite large,[1] I have assumed that the costs of presents distributed would compensate for the value of those received in presents. The total value (as scaled down) may be divided by 1225 and the result multiplied by 40 to get the expenditure incurred on arsenal and armour in the 40th R.Y.[2] By this means we may estimate the expenditure on cannon, matchlock etc. at 89,61,015 dāms Abul Fazl's own account suggests a heavy scale of expenditure. Rather frustratingly, he confesses his inability to give any number for cannon pieces because the pieces especially the gajnāl and the narnāl, were "so numerous".[3] In the case of matchlocks, out of "the thousands" manufactured, 105 were selected for Emperor's

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1. Āin, I, pp.118, 127.

2. For reasons behind adopting this mode of calculation see Chapter VIII (for calculation of annual transfer to the Imperial hoard).

3. Āin, I, p.125. But Jahangir (Tuzuk-i Jahāngīrī, p.10) in his first regnal year (1605-6) speaks of his ambition to have 3000 carts in his Artillery (top-khāna). If each gun needed a cart, Akbar must have left behind at least 2000 guns for Jahāngīr to have aimed at 3000.

personal use (khāsa) and 31 kept in reserve (kotal) to replenish the shortage in the number of the khāsa muskets on account of the Emperor's giving some away many in presents all the time.[1] One hundred and one matchlocks were kept in the harem.[2]

Similarly, many hand weapons were marked as khāsa, and quite a few were distributed in presents; the number of the khāsa swords was 30, those kept in reserve to make-up the shortage (kotal) amounted to 40.[3] Abūl Fazl gives a detailed account of the hand-weapons kept for the Emperor's personal use (khāsa). In addition to the khāsa weapons, an entire arsenal used to accompany the Emperor while holding court, on hunting expeditions or other excursions.[4] Though the data provided by Abūl Fazl cannot serve as a firm basis for quantification, the numbers and the prices of hand-weapons, given in the Āīn, suggest that a total expenditure of 2,20,80,257 dāms per annum, derived from Pelsaert's figures, is not untenable.

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1. Owing to the frequency of the presents, 31 kept in full reserve (kotal) were not deemed sufficient, and 27 more were marked for this purpose in "partial reserve" (nim kotal), Ibid., I, p.127.
2. Ibid., I, p.127.
3. Ibid., I, p.118.
4. Ibid., I, pp.118-9.

The total annual amount incurred on the Imperial military establishment, c.1595, may now be summarised as follows:

Pay of the Ahadis	:	8,10,79,200 dāms
Pay of foot-retainers	:	6,00,00,000 ,,
Expenditure on animals	:	19,38,56,567 ,,
Expenditure on arsenal & armour	:	2,20,80,257 ,,
Total	:	35,70,16,024 ,,

In other words almost 8.805% of the total jama' of the Empire was spent on the maintenance of the Emperor's personal military establishment. The only qualification, that has to be made, is that many of the ahādis and some foot-retainers (whose pay forms part of our estimates) worked in various departments of the household, though they drew their salaries from the army-list.[1] Thus at least some of the expenditure on the military establishment was incurred for 'non-military' purposes.

1. On this see also the concluding paragraphs of Chapter XI.

Chapter XI

IMPERIAL HOUSEHOLD ESTABLISHMENT

One may expect that the Imperial household establishment should have accounted for a considerable portion of Imperial expenditure. The household encompassed in Abul Fazl's chapter '*Manzil-ābādī*', consisted mainly of the harem, the kitchen and other departments such as store-houses of precious stones and gold ornaments etc., the wardrobe, library and many others. With the help of the data in the *Āīn* and some statistics offered by Pelsaert we may venture estimates of the annual expenses on these various items.

Harem:

In the Imperial household establishment, the harem not only constituted the largest department but also accounted for the heaviest expenditure. Abul Fazl says that the female-inmates of the imperial harem numbered over 5,000.[1] Cash stipends were paid to the ladies

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1. *Āīn*, I, p.40.

in the harem, under a special seal; no paper drafts (barāt) were issued.[1] High-ranking ladies (mahin-bāno) received stipends ranging from Rs.27 to 1,610 per month. The other female inmates were placed in two grades: The monthly stipends of those in Grade I ranged from Rs.20 to 51, and of those in Grade II, from 2 to 40.[2]

Abul Fazl does not give the number of those whom he styles 'high-ranking ladies' nor of those who were placed in either of the other two grades of other inmates. One may say that at least all the wives and near female relations of the Emperor should have belonged to the category of mahin-banos. Monserrate gives the number of Akbar's wives as 300;[3] but we do not know the number of other female-relations (aunts, sisters, etc.) who too must have been counted among the ladies designated mahin-bāno in the Āin. However, to calculate the floor of expenditure, the number of high-ranking ladies may at a minimum be assumed to be 300. The range of their pay is too wide to

1. Āin, I, p.41.

2. Ibid., I, p.40. Blochmann's text and Add. 7652 give Rs. 2 to 40 but Add 6652 reads Rs.10 to 40; ten seems a possible error for 2 here. The division of female-inmates of the harem (Mukhaddarāt-i iqbāl) was first put into effect in the 19th year. (Akbarnāma, III, p.105).

3. Monserrate, p.105.

give any workable average. We may, therefore, take Rs.100 rather arbitrarily as the probable average pay per month per head. This assumed average is on the lower side, since it implies that most of the wives received less than Rs.100 per month.

On this conservative basis the annual expenditure on cash stipends to the x high-ranking ladies can be set at (300x100x40x12 =) 1,44,00,000 dāms.

With 300 thus accounted for, the other female-inmates should have numbered 4,700. The designation used for them parastārān-i huzūr could cover anyone from a favoured concubine to an ordinary female servant or slave. We have no means of knowing for certain how many of these women were placed in Grade I and II. In Grade I were probably concubines and holders of offices in the harem.[1] As such their number is not likely to have been less than 700, it being improbable that the ratio between them and the high-ranking ladies was much less than 1:2.5. The remaining 4,000 may then be taken to be female attendants and slaves, and to have formed Grade II.

1. Such female officials are mentioned in the Āīn, I, p.40; some seem to have been designated urdu-begiān (p.41).

Now, since the minimum monthly pay for Grade I is set at Rs.20 and maximum at Rs.51, an assumed average pay of Rs.30 may not be far from the truth. For Grade II, comprising the attendants and slaves, the average might well have been closer to the minimum (Rs.2); and the assumption we may make, then, is that the female attendants received Rs.5 per month on an average - a salary about twice that of an unskilled workman, so that it may represent a reasonable average of salaries in the various scales in both grades ranging between the extremes of Rs.2 and Rs.51. On these assumptions, the annual expenditure in dāms could be computed as follows:

Grade I : 700x30x40x12 = 1,00,80,000 dāms
Grade II : 4,000x 5x40x12 = 96,00,000 dāms
The total for Grade I &II = 1,96,80,000 dāms

Adding this to the amount paid to the women of high ranks, the total expenditure on cash stipends in the harem should have amounted to 3,40,80,000 dāms.

This amount does not include the pay or cost of maintenance of the eunuchs who served in the harem,[1] but

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1. Āīn, I, p.40.

whose actual number is unknown. Presumably their pay was higher than that of ordinary male slaves. To allow for this additional expenditure, and keeping in view the generally conservative assumptions we have made, we may put the annual amount spent on cash stipends and wages in the harem at the round figure of 3,50,00,000 dāms.

Food & Kitchen:

Abul Fazl gives a fairly elaborate account of the imperial kitchen supplying us with about 30 recipes of dishes cooked for the imperial table.[1] Since he provides immediately afterwards a list of the average prices prevalent in the imperial camp,[2] it may be possible to make use of his data to estimate the imperial expenditure on food. But the first task, then, is to establish the total quantities cooked, or the number of persons fed from the imperial kitchen.

The Āin says that all the female inmates of the harem were given rations (rātiba).[3] But it is not clear

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1. Āin, I, pp.55-8.
2. Ibid., I, pp.60-6.
3. Ibid., I, p.53: "Whatever ration (rātiba) is provided for the attendants of the bed-chamber (i.e. the harem), begins to be distributed from the morning and most often continues into night".

whether they received cooked or uncooked food. From the large amount of fire-wood supplied to the Imperial household, viz., 1,50,000 mans (mod. equivalent 1,00,650 maunds)[1] per year, one is tempted to conclude that food for all the over 5,000 inmates of the harem was prepared in the royal kitchen. This would then mean that the kitchen staff should have also been very large. Even given one cook or assistant to 10 persons fed, there should have been at least 500 persons employed in the kitchen to meet the needs of the 5000 inmates of the harem. But there is another possibility: Fire-wood too could have been rationed out to the harem inmates, along with the other ingredients of diet. In that case cooking might have been done at several kitchens within the harem, and female cooks might have been employed, who themselves are already included among the 5,000 female-inmates counted by Abūl Fazl. This gets some support from the statements in the Āīn, that when Akbar closed his periodic abstinance from meat, he did so by eating from meat dishes sent from his mother's establishment.[2] The Āīn also says that the cooking utensils in the imperial kitchen

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1. Āīn, I, pp.151-2.

2. Ibid., I, p.59.

received a tin-coating (*qali*) every month, while those of the princes were tinned once in two months.[1] Thus his mother and the princes, at the very least, had separate kitchens.

However, whether cooked in a single kitchen or at various places in the harem, food was supplied to at least 5,000 inmates per day. With the total quantity given by Abul Fazl, the fire wood consumption per head (counting 5000 persons fed) works out at 30 *man* per annum or 3.3 *ser* (2.070 kg.) a day. This seems rather high, particularly since the fire-wood supplied to the Imperial kitchen must have been of superior quality. Even if we presume that some fire-wood was also used for heating in winter and for providing hot-water in the *hammāms* (baths) the amount daily consumed was high enough to suggest that the number of persons for whom food was cooked was considerably more than 5,000, and that our estimate of 5,000 is perhaps a conservative one.

If we can somehow determine the expenditure on diet per head, it may become possible to attempt a rough estimate of the amount spent on food materials. The *Āin* makes no direct statement in this respect and one can only

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1. *Āin*, I, p.55.

resort to some rather arbitrary calculations. Let us begin by assuming that the consumption of food per head in terms of weight was 1½ Akbari ser (0.99 kg.) per day. This may appear to be rather on the liberal side, but one is perhaps entitled to assume a generous ration in the Imperial establishment.

With the help of the recipes given by Abul Fazl, the value per ser (Akbarī) of various dishes (23 out of the total 30 for which complete details are provided) can be calculated on the basis of camp prices given in the Āīn. This will probably result in some overestimation, camp prices being retail prices[1] while the supplies for the imperial establishment came from various places all over the country,[2] and were therefore most probably equivalent to wholesale prices (after adding the cost of transport to primary costs).

The weights and prices of the various dishes described in the Āīn are given in the following table. I have arranged these broadly in four groups, viz., rice preparations; wheat preparations; sweet dishes; and meat and vegetable preparations. As estimate of cost of cakes of bread (chapātī) is added at the end.

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1. See Chapter XIV.

2. Āīn, I, p.53.

Recipe	Value in *dams*	Weight in *ser*	Value per *ser*
Rice Preparations:			
Qubuli	85.05	24.38	3.48 *dams*
Qima Pulao	106.78	27.90	3.83 "
Wizobiryan	99.39	24.00	4.14 "
Khushka	22.70	10.50	2.16
Khichri	20.40	13.00	1.56
Shola	85.56	17.48	3.49
Average			3.58
Wheat Preparations:			
Qutab	77.20	17.92	4.31
Harisa	74.62	17.56	4.25
Koshak	78.28	16.11	4.86
Halim	76.13	15.27	4.99
Average			4.58
Sweet Dishes:			
Zarad biranj	103.92	20.40	5.09
Shir biranj	14.00	12.00	1.17
Halwa	86.75	30.00	2.89
Average			3.28
Meat & Vegetable Dishes:			
Do piyaza	75.95	14.58	5.21
Malghoba	73.53	22.42	3.28
Yakhni	66.70	11.50	5.80
Kabab	73.70	11.75	6.27
Baghra	107.23	20.27	5.29
Qima shorba	75.86	15.32	4.95
Mutbakh gosfand	76.11	13.05	5.83
Dampukhat	92.56	15.65	5.91
Qaliya	77.82	13.26	5.87
Average			5.18
Chapāti (bread)	0.55	1 (15 in number)	5.18

These costs do not include the cost of fire-wood consumed and the wages of the kitchen staff. Being costs of ingradients above, they would largely remain the same whether the entire food was cooked at the single imperial kitchen or cooked at different kitchens within the harem along with the main kitchen.

We may further assume a uniform composition for food for all inmates of the harem. There may be possible objection that the composition of food would not have been same for all of the harem inmates and the high ranking ladies might have enjoyed better food and served with a large variety of dishes, while the diet given to the attendants and slaves should be expected to be plainer. However, since we are using unweighted averages of all the possible recipes, the number of dishes would not affect our estimates markedly.

Assuming the following composition of the diet per head and multiplying these quantities with the average value per <u>ser</u> worked out by us for the four groups of dishes we get the following estimate for consumption per head per day.

wheat preparations	¼ <u>ser</u>		1.15 <u>dāms</u>
rice ,,	¼ ,,		0.86 ,,
meat & veg. ,,	¼ ,,		1.30 ,,
sweet dishes	¼ ,,		0.82 ,,
<u>chapati</u> (bread)	½ ,,	(7½ in no.)	0.27 ,,
		Total	4.40 ,,

The daily expenditure on food per head in the Imperial establishment thus works out at 4.40 dāms or more than double the total wage of an unskilled labourer.

Now to convert this into total expenditure per year on the female inmates only, one would need to multiply the estimated expenditure per head by the number of persons served and then by the number of days in a year,

4.4x5000x365 = 80,30,000 dāms

We must remember too, that from the quantity of fire-wood consumed, the total number of persons fed by the imperial establishment would seem to have actually considerably exceeded 5,000. Furthermore, this amount does not include the expenditure on the royal table itself, which could not have been negligible.

According to Abul Fazl, 100 dishes were always kept in readiness, round the clock in the royal kitchen, since Akbar used to take food once a day without fixing any time for it.[1] Monserrate tells us that 40 courses were served at each meal.[2]

1. Āin, I, p.52.

2. Monserrate, p.199.

Out of the numerous dishes prepared by expert cooks recruited from within India as well as from Iran, Turkey, and other countries, Abul Fazl, describes recipes for 30 common dishes. In describing the recipes Abul Fazl seems to have taken 10 <u>sers</u> (6.2 kg.) as the standard minimum unit. In the absence of any better information, one may assume that at least all these 30 dishes were served at each meal and the total quantity of basic ingredients in all the dishes cooked was at the minimum 10 <u>sers</u> (6.2 kg.).

Proceeding on these assumptions, the cost of the food served at each meal at Akbar's 'table' works out at 1,645.22 <u>dāms</u> (app. Rs.41). This certainly is an underestimation since instead of 40 dishes reported to be served at the royal table we can compute the costs only for 22 dishes. Moreover, the dishes served at the royal table could not, of course, have been only the ordinary ones described by Abul Fazl. Therefore, what we get here is a minimum. Since as noticed earlier, Akbar used to eat only once a day, the annual minimum expenditure works out at (1645.22x365=) 6,00,505 <u>dāms</u>.

Even if we assume that the female cooks were counted among the 5,000 female-inmates of the harem, we have to allow for a staff of at least 100 cooks and other

related employees for the royal kitchen. The pay scale in this department for a *piyāda* varied from 100 to 400 *dāms* per month.[1] We should, therefore, allow, taking as the average rate of 250 *dāms* per month, a sum of (250x100x12 =) 3,00,000 *dāms* per annum for the cooks and other servants. The superior officials should be excluded because they got their pay on the rolls of the army (as *ahadīs* or *mansabdārs*).

In estimating the cost of fire-wood we can perhaps use the prices given by Pelsaert. The latter says that the price of fire-wood at Agra varied from 12 to 18 pice per *man* of 60 lbs.[2] i.e. 6.915 *dāms* per *man* of 55.321 lbs at an average.[3] Since the fire wood used in the Imperial kitchen would have been of the higher quality, this average price would be a little lower than the actual; on the other hand, prices had increased between the time of the *Āīn* and Pelsaert (1620's). Supposing that one would have cancelled the other, we can assume, therefore, that the total cost of fire-wood was (6.915x1,50000 =) 10,37,250 *dāms*.

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1. *Āīn*, I, p.60
2. *Jahangir's India*, p.48.
3. For *man-i Akbarī*, see Irfan Habib, *Agrarian System*, p.368.

In this way the total Imperial expenditure on food per annum may be summarised as follows:

In female-inmates	80,30,000	dāms
In royal table	6,00,505	,,
In fire-wood	3,00,000	,,
In cooks' wages	10,37,250	,,
Total	99,67,755	,,

The cost of utensils, polishing, etc., remains unknown. But such costs can perhaps be taken into account by rounding off the expenditure on the kitchen to 1,05,00,000 dāms.

Drinking-Water Supply:

The arrangements for drinking water were so elaborate that it required from Abūl Faẓl a separate chapter (Āīn-i Ābdār khāna) to describe them.[1] According to the information given in this chapter Akbar used to drink water brought from the river Ganga, irrespective of where he was, whether at the court or on march. Even the water used for cooking purposes contained some Ganga water. Special officials were appointed to arrange for the carriage of the water from the Ganga.

1. Āīn, I, pp.51-2.

Ice was used round the year; the cost of ice that was brought from "an average distance" is said to be 15 dāms per ser.[1] Water was also cooled by using saltpetre; and 2.5 sers of saltpetre was needed to cool only a ser of water, while the cost of saltpetre was 10 to 53 dāms per man.[2]

Since we have neither any estimates for the amount of ice consumed nor of the water cooled, it seems difficult to estimate expenses on this department. Nevertheless, we may at least fix some lower limit for the expenses. Even if we assume that only one man of ice was consumed in the Imperial household daily, the amount spent on ice alone would have amounted to (40x15x365 =) 2,19,000 dāms per year. Besides this the amount spent on cooling water, arranging the supply of water from the river Ganga, the wear and tear of the utensils and the salary of the employees in the department should add up to not an insignificant amount. One may, therefore, hazard the conjecture that at a minimum about 10,00,000 dāms would have been spent on the Ābdār khāna.

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1. Āʾīn, I, p.52.
2. Ibid., I, p.51.

Fruits:

The prices of a variety of fruits are set out in detail in the Āīn, but we have no figures for the quantities consumed. Moreover, at least a part of the fruit supply would have come from the imperial gardens and orchards. But orchards and gardens too would have required investment and recurring expenditure and so the fruits from them too would have represented a considerable amount of expenditure.

Abūl Fazl treats betel-leaves among fruits.[1] These too were procured not only from the market but were received in lieu of land-revenue. From the province of Allahabad some 12,00,000 leaves were collected in revenue.[2] It is, therefore, difficult to attempt any computation of expenses on these items. In the absence of any estimate we may assume that the expenditure on fruits etc. was one-tenth of the expenditure on food, that is 10,50,000 dāms per year.

The total expenditure on the kitchen, ābdār-khāna and fruitery should therefore have added up to 1,25,50,000 dāms per year.

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1. Āīn, I, p.80.
2. Ibid., II, p.424.

Hunting Animals & Pigeons:

In keeping with the time-honoured Mongol tradition, Akbar maintained a huge hunting department. According to Abul Fazl one thousand cheetahs or hunting leopards (yuz) were maintained in the Imperial parks.[1] Out of these 50 were selected as khāṣa,[2] and were kept at the court. Two hundred servants were employed to look after these khāṣa animals.[3] Other leopards were allowed 2 or 3 attendants each: Those who were carried on horses required two; others who were carried on oxen-drawn carriages required three. The servants were divided into two categories; the superior received 180 to 300 dāms per month, and the lower staff from 100 to 160 dāms. The meat allowed to a cheetah per day varied from 2.57 sers to 5 sers.[4]

If we allow to the khāṣa leopards the maximum ration of meat and the highest wages to their attendants and further assume that the servants were evenly divided into two

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1. Āīn, I, p.208; Firishta (I, p.272), however, records a tradition that it was Akbar's wish to have 1,000 leopards but whenever the number exceeded 900, some died and the number always remained below 1,000.

2. Āīn, I, p.208.

3. Ibid., I, p.207.

4. Ibid., I, p.208.

categories, viz., superior and lower, the amount spent on them works out as follows:

Food	:	$\frac{5}{40}$ x 30 x 50 x 365	= 67,500
Servants	:	100 x 300 x 12+100x180x12	= 5,52,000
Total	:		= 6,19,500 dāms

Assuming that out of the remaining 950 cheetahs, half were provided with 2 servants each and the other half, 3 each, and further that to each cheetah one superior attendant was assigned, and allowing also the average wages to the servants and average ration of meat to the beasts, we may estimate the expenditure on the 950 animals as follows:

Food	:	$\frac{3.72}{40}$ x 30 x 365 x 950	= 9,67,433 dāms
Servants	:	950x24012+2,375x130x12	= 64,41,000 ,,
Total	:		= 74,08,433 dāms

The imperial expenditure on food and servants of both categories of cheetahs then should have been 80,27,933 dāms a year.

We have not considered the amount spent on carts (ʿarāba) and horses because the carts for cheetahs were perhaps counted among those 1,750 for which the expenditure has already

been estimated;[1] the horses might similarly have been accounted for among the 12,000 Imperial horses. Abul Fazl mentions expensive trapping for cheetahs, without mentioning their costs. The amount spent on these trappings would have been a part of total expenditure on trappings for Imperial animals. This amount is estimated separately in this chapter. However, we have to make some allowance for litters etc. The Imperial expenditure on cheetahs can thus be rounded off at 80,30,000 dāms a year.

Animals such as deer, dogs, panthers (siyāh-gosh) and hawks were also kept for hunting.[2] The Āʾīn gives the number of deer at 12,000 out of which 101 were selected as khāsa animals;[3] but no data for their costs of maintenance are furnished. For the dogs, panthers and hawks the amount of food allowed and the wages of the servants (100 dāms a month for attendants of dogs and panthers[4] are recorded. But the numbers of the animals are not specified. It is, therefore, not possible to compute the amount spent on them.

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1. See Chapter X.
2. Āʾīn, I, pp.208-12.
3. Ibid., I, pp.165, 167; Firishta, I, p.272, however gives the number of deer as 5,000.
4. Āʾīn, I, pp.209-10.

Besides the hunting animals and hawks, a large number of pigeons too were reared and kept. Abul Fazl shows his inability to give the precise number of pigeons but he estimates them at over 20,000. Out of these 500 were kept as khāsa.[1] These accompanied Imperial camp, being carried by bearers (kahār). All the servants attached to the pigeon house drew their salary on the roll of army.[2] Their wages ranged from 80 dāms a month to as high as 1920 dāms.

Though the infomation provided in the Ain does not enable us to compute the expenditure on hunting animals other than cheetahs, it at least offers clues by giving the number of deer and pigeons and the wages of the animal attendants. These figures suggest that on these animals the expenditure could not have been less than 50,00,000 dāms a year. This estimate is arbitrary; but it could err only on the lower side.

In all, let us say, the expenditure on hunting animals, hawks and pigeons was around 1,30,00,000 dāms a year.

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1. Āin, I, p.217.

2. Ibid., I, p.218.

Other Departments:

There were a number of other departments such as wardrobe, library, encampment and stores of precious stones etc. on which the imperial administration must have incurred considerable expenditure. But though the Āīn gives a fairly detailed description of these departments, the information it gives is inadequate for our purpose: Either it offers no statistics or the data offered by it are so scanty or incomplete that an attempt at quantification on their basis is not possible. We are, however, fortunate in possessing in Pelsaert (and, copying from him, de Laet)[1] a statement of the value of the different kinds of goods in the stores of the Imperial establishment at the time of Akbar's death (1605); and from this we can perhaps attempt an estimate of annual expenditure in these departments.

Pelsaert gives us to understand that his figures are drawn on the basis of information contained in the account books maintained by the Mughal administration. In his inventory of Akbar's possessions, Pelsaert records, along with the

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1. A Dutch Chronicle of Mughal India, tr. B. Narain & S.R. Sharma, pp.33-35; The Empire of the Great Mogol, tr. J.S. Hoyland, pp.107-110.

stocks of specie, the value of cloth in the Imperial wardrobe (the _Āin's_ _tosha khāna_), tents and articles of furniture in the Imperial stores (_farrāsh-khāna_), cannon, muskets, hand weapons and armour in the Imperial arsenal (_qur khāna_), books in the Imperial library, rich trappings for animals, etc. In addition to these he also furnishes us with the number of animals in the Imperial stables. Pelsaert's figures for horses and elephants etc. are largely corroborated by the _Āin_ itself, as well as by the account left by Firishta.[1] Moreover, the items for which the total values are given, are all accounted for in the _Āin_. For instance, Abul Fazl mentions the animal trappings and harnesses which were of gold and silver cloth studded with jewels, etc., used for the _khāsa_ animals;[2] their value is provided in Pelsaert's list. Similarly, all other items of goods listed in Pelsaert also appear in the _Āin-i Akbari_.

Abul Fazl says that all the cloth bought, woven to order and received in presents was preserved, and experienced men were appointed to enquire into the previous as well as the current prices of these.[3] Thus there must have

1. Vide Chapter X.
2. _Āin_, I, pp.135-8, 142.
3. _Ibid._, I, p.101.

been a standing official valuation of all goods in the Imperial store houses; and Pelsaert's figures could very well have come from an official record of valuation, just as he says they do.

As printed in the translations of Pelsaert's chronicle and de Laet's De Imperio Magni Mogolis, the figures contain some errors. Some misprints in Pelsaert can be corrected by referring to de Laet. Other errors, common to both, can be corrected quite easily by reconciling the different items of value with sub-totals and the grand total given by Pelsaert. It has been found that only three slight corrections are needed. The reconstructed figures as well as the originals printed in Pelsaert are given in the table below:

Table (next page)

These figures can provide us with the means of estimating the annual expenditure on various departments. We can, perhaps, best do so by venturing a few assumptions and then examine the results. It would, first of all, be a valid assumption that goods left by Akbar should have taken years to accumulate and the total value given by Pelsaert would comprise

Table

Items	Accepted figures in Rs.	As printed in Pelsaert's *Chronicle*	Remarks
A: Cash:			
Muhrs worth	97,580,000¾	97,580,000¾	
Rupees ,,	100,000,000	10,000,000	commas misplaced
Dams ,,	766,666	766,666⅔	
Total of A	198,346,666¾	19,834,666¾	last digit ('6) in the main number missing in transl.
B: Precious Stones, etc., Wrought Silver, gold & Procelain etc.			
Precious stones	60,520,521	60,520,521	
Silver works	2,225,838	2,225,838	
Gold ornaments	19,006,745	19,006,745	
Gold works	9,507,992	9,507,992	
Copper works	51,225	51,225	
Porcelain	2,507,747	2,507,747	
Total of B	93,820,068	93,820,068	
C: Other items:			
Cloth	15,509,979	015,509,979	First digit '0' to be omitted; de Laet reads 503,252, the fig. for next item.
Woollen cloth	503,252	503,252	
Tents etc.	9,925,545	99,25,545	misplaced commas
Books	6,463,731	6,463,731	
Artillery	8,575,971	8,575,971	
Weapons & armour	7,555,525	7,555,25	Last digit (5) missing; correct fig. in de Laet.
Armour	5,000,000	50,000,000	One superfluous '0'; correct fig. in de Laet.
Animal harness	2,525,646	25,25 , 646	Misplaced commas.
Total of C	56,059,649	56,059,649	
Grand Total	348,226,383	348,226,383.	

the total of costs incurred annually upon their acquisition. Since the Empire constantly increased in extent, and the revenue-resources correspondingly increased, the scale of purchases should have become greater.

It will, thus be misleading to assume that a simple average worked out by dividing the values given by Pelsaert, by the number of years in the reign can represent the expenditure on acquisition, in the 40th R.Y.

We must, therefore, again make the same assumptions, as in the case of annual savings (Chapter VIII) that the costs incurred every year were in arithmetical progression and compute the expenditure in the 40th year accordingly. This can simply be done by dividing the value by 1225 and then multiplying the quotient by 40. This would, however, not include the amount spent to cover loss and wear and tear of the articles. At the same time, the value of presents received, appears here as a part of expenditure, while the costs of articles given as presents are not counted. It seems practically certain that the value of presents received exceeded those given away. This excess might be set off against the annual depreciation (through age, use and loss) of value of the stored articles.

We shall, however, bear another factor in mind while attempting to convert Pelsaert's values into annual expenditure. It appears from Abul Fazl's account that the valuation of goods in the Imperial store houses was made on the basis of prices prevailing in the market. Only this can explain the appointment of experienced men to enquire into the previous and current prices.[1] This implies that the 'value' does not represent the actual price at which the goods were bought or manufactured, in case it was a product from the Imperial kārkhānas, which most of the stored goods were. Another statement of Abul Fazl establishes our point beyond dispute. He says that a carpet was woven at the cost of Rs.1,802 (ba kharch raft); but it was valued at Rs.2,715 (arj bar nihād).[2] In other words, the price was fixed at 50% above the cost. Such a high valuation is of course not a rule but an exception, since it was for this reason precisely that the particular product attracted Abul Fazl's attention. But we may assure ourselves that generally speaking the values assigned to goods in the Imperial store houses were higher than the actual cost incurred on acquiring them. While we have no means of determining the scale of overestimation, we may, perhaps, fix it

1. Āin, I, p.101.

2. Ibid., I, p.51.

at 25%. That is the actual amount spent on these goods was 20% less than their recorded value. We shall therefore scale-down the values given by Pelsaert by 20% to get the actual expenditure by the Imperial establishment.

Now, dividing the scaled-down value by 1225 and then multiplying the result by 40 we may get a provisional estimate of the approximate cost of acquisition in the 40th regnal year (1595-96). The cost would, however, be in terms of 1605 prices. Since we ourselves are concerned with the year 1595-6, we have to assume that these were the same as in 1595: This assumption is not so vulnerable to objection as it may look at first sight: The change in price-level was probably not very great during the decade, 1596-1605; the rupee, in terms of which Pelsaert has stated all the values, continued in 1605 to fetch 40 dāms as it did in 1595.[1]

It may be noted that the annual cost of acquisitions worked out in this way would include the wages of workmen and other employees as well as any other expenses on the Imperial workshops (kārkhānas) where perhaps most of the articles stored in the Imperial store-houses were made. Thus no separate calculation for expenses in workshops need be made.

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1. Irfan Habib, Agrarian System, p.381.

Based on our method of computation of cost for the year 1595-96, we may now offer some figures and comments on the annual Imperial expenditure on different heads.

Wardrobe:

According to Pelsaert the value of the cloth in the Imperial stores was Rs.1,60,13,231 (woollen articles valued at Rs.5,03,252 and other kinds at Rs.1,55,09,279). Reducing the amount by 20% to get the cost price and after converting it into dāms, and proceeding by the method of calculation already described, we estimate the expenditure on cloth for 1595-96 at 1,67,32,193 dāms.

Even from the account given in the Āin, one would expect a large amount of expenditure on the wardrobe (tosha khāna). In each season (faṣl) one thousand suits were made for the Emperor, from different types of cloth. Out of these 120 were kept in readiness all the time.[1] Such a large number of dresses were perhaps needed because of the practice of conferring robes of honour (khilát) on favoured persons. That the robes were given out of the khāṣa dresses is evident from Abúl Fazl statement that Akbar's clothes were found to fit every body whether tall or short.[2]

1. Āin, I, pp.102-3.
2. Ibid., I, p.103.

There is little more specific information, in Abul Fazl's description to build up any kind of estimate of annual costs in this department. He says that in Lahore alone there were 1000 kārkhānas making shawl.[1] But since these probably includes kārkhānas of nobles and even merchants, the figure cannot serve as the basis for an estimate of the Imperial expenditure on shawls. Abul Fazl does provide us with the prices for a variety of golden (zarrīn), silken (abreshmī) and cotton (resmanī) cloth.[2] He mentions woollen cloth too as manufactured at the Imperial kārkhānas but does not give the prices of woollen cloths.[3] The costs of tailoring of some dresses too are given; but since the number of such dresses made is not recorded, one cannot estimate the expenses on the tosha-khāna. One may, however, suppose that the actual expenditure was even higher than that arrived at from the value given by Pelsaert, since perhaps the amount spent on the robes granted away exceeded the value of those received in offerings or presents.

Utensils & Other Articles:

Pelsaert gives the value of gold pots, dishes, cutlery, figurine, silver utensils as well as chandeliers,

1. Āīn, I, p.104.
2. Ibid., I, pp.106-11.
3. Ibid., I, p.104.

bed steads, etc., copper ware and procelain crockery as Rs.1,42,92,802; this should be scaled-down by 20% to give us approximate cost-prices. Following the method of calculation explained above, we get from this the figure of 1,49,34,520 dāms for expenses during the year 1595-96. We assumed that the value of gifts received may be off-set by the loss by wear and tear which ought to have been high in the case of procelain.

Animal Harnesses:

Abul Fazl mentions rich trappings and pieces of harnesses that were used to decorate the khāsa animals (elephants, horses, camels, etc.) for ceremonial occasions and these were in addition to the usual harness which was changed periodically.[1] From Pelsart's statistics the amount spent in 1595-96 on the pieces of expensive harness can be calculated at 26,39,043 dāms.

Books & Paintings:

Akbar had a remarkably rich library. Pelsaert says that there were 24,000 books, originals (authors' 'autographs'?) as well as copies, the estimated value being Rs.6,46,373

1. Āin, I, pp.135-8, 142.

The high cost (more than Rs.250 per volume) seems justified because it is not only the high quality of hand-made paper and splendid calligraphy that made the books precious, but these were often illustrated profusedly by miniatures painted by Akbar's painters. This can be seen from such MSS as have survived. One book the Qissa-i Hamza contained no less than 1,400 illustrations.[1] The costs might well have included payments made to calligraphists, as well as to painters and even perhaps the translators of Sanskrit texts which Akbar patronised.[2] A number of calligraphists and painters were on the Imperial rolls.[3]

Proceeding with our assumptions namely reducing the value by 20% to obtain the total of actual costs, and then calculating on the basis of an expenditure increasing in arithmetical progression we can estimate the expenses on the library in 1595-96 at 67,53,940 dāms. This estimate may still be on the lower side since it does not probably include the amount spent on the library staff (the salary of the piyādas appointed in the department varied 600 dāms to 1,200 dāms per

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1. Āin, I, pp.117-18.
2. Ibid., I, pp.115-6; Badāunī, II, pp.336, 366.
3. Ibid., I, p.118.

month[1] and the payment made to the readers who read books aloud to the Emperor.[2] It is interesting to note that the books were not only given out in presents but were even given in armās (payment in kind to army).[3] On the other hand, books were also acquired as war-booty, as well as in offerings and presents and possibly in property acquired in escheat.

Tents & Furniture for Encampment:

According to Pelsaert the value of the tents and other articles used in camps, as entered in the account books was Rs.99,25,545. This in turn gives us expenditure of 1,03,71,182 dāms in 1595-6. Abūl Fazl's detailed description of the layout and organisation of the camp in his chapter the Āīn-i Farrāsh khāna, accords with the high value assigned in Pelsaert's record to tents and furniture. The Āīn says that one tent designated the bārgāh cost Rs.1000; and there were 11 other kinds of tents some double storeyed as well as folding.[4] The sāyābāns (hanging shades) of the tents were made of brocade and velvet, and embroidered with gold.[5]

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1. Āīn, I, p.118.
2. Ibid., I, p.112.
3. Badāunī, II, p.
4. Āīn, I, pp.49-50.
5. Ibid., I, p.49.

Precious Stones and Ornaments:

Pelsaert gives the value of precious stones in the royal treasury at the death of Akbar, as Rs.6,05,20,521; of gold ornaments the value reported by him is Rs.1,90,06,745. These are very high values; yet the fact that they are not round, but exact, suggests their being totals of actual or detailed valuations of individual pieces. The estimation of the values of precious stones was a difficult task and necessarily involved much arbitrariness.[1] But that the total value offered by Pelsaert is not excessive is supported by Abul Fazl's statements in respect of individual stones and gems. He mentions rubies worth Rs.52,000 each and strings of pearls in which each pearl was valued at 30 muhrs (Rs.270).[2]

In trying to estimate the annual expenditure based on the total value of precious stones and ornaments in 1605, one has to keep in view the fact that quite a few of them were seized as booty, from the treasures of defeated chiefs and rulers.[3] Since precious stones and gold ornaments

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1. Tavernier's Travels in India, tr. Ball and Crooke, New Delhi, 1977, vol. I, pp.112-13, vol. II, pp.72-3, where it is related that only the deposed Emperor Shāhjahān was able to estimate the value of a particular diamond correctly.

2. Āin, I, pp.11-12, compare Tavernier's prices for a ruby (Rs.95,000) and a 'large Topaz' (Rs.181,000) in the Mughal treasury (Vol. II, pp.100, 102).

3. See, e.g., Akbarnāma, II, p.214; & III, p.836.

do not wear off, items reposing in the Mughal treasure in 1605, might have been in possession of the Mughal Imperial house for more than a generation; and there must have been a recognisable portion inherited from Humāyūn. It will therefore, perhaps be reasonable to assume that about one third of the total jewels in the Imperial treasure, at the close of Akbar's reign, might have been those acquired as a result of acquisitions of those in possession of defeated powers, or were inherited by Akbar. We have also to make an allowance for presents (or a rather the balance of presents, the value of presents received less that of gifts awarded), which should have been considerable, since precious stones were the most acceptable items of gifts (nazr/paishkash) made to the Emperor by the high nobles.[1] There were, in addition, the jewels, etc., acquired through escheat. We may, therefore, allow that at least 20% of the gems and ornaments in Akbar's vaults in 1605 had been acquired through gifts and confiscations. A further scaling down by 20% has to be made to allow for the excess of stated value above costs. Having a net estimated total of cost values of precious stones and jewels factually purchased by Akbar (1,35,72,65,357 dāms), we can now aplly the simple formula for calculating the variable annual expenditure. From

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1. Early Travels (John Mildenhall's account, 1599-1606), p.55; Akbarnāma, II, p.149; Tabaqāt, II, p.155. Cf. Tavernier, II, pp.100-01.

this formula one can set the total expenditure on precious stones and ornaments, in the 40th regnal year (1595-96) at 4,43,18,868 dāms.

It seems rather strange that the sum spent on acquiring gems and ornaments exceeded the expenditure on the arsenal or, for that matter, on the entire harem. But this was in keeping with the intense interest of the Mughal Emperors in collecting all kinds of jewels and ornaments; and such heavy expenditure on jewellery must be regarded as an economic fact of importance in its own right.

Building Construction:

According to Abūl Faẓl large sums were spent on the construction of forts, sarāiś, schools, religious houses (riyāẓat kada), tanks, wells, etc.[1] He records in great detail the wage-rates for those employed in the building department, the prices of building material and the estimates of costs of construction.[2] Nevertheless, all these data offer no clue to the total expenditure on the building department. We come across only some sporadic information about costs of

1. Āīn, I, p.167. The construction of sarāiś is also mentioned in the Akbarnāma, II, pp.262-3.

2. Āīn, I, pp.167-71.

construction of individual buildings. For example, according to an inscription on the Nagarnagar fort in Srinagar, 1,10,00,000 dāms were granted from the Imperial treasury for the construction of the fort, its building being completed in the 44th regnal year.[1] Pelsaert says that it took Jahāngīr five years and Rs.12,00,000 to complete the construction of the Allahabad fort,[2] built by his father (i.e. 96,00,000 dāms per annum on an average).

Keeping these figures in view, one may estimate the average annual expenditure on the buildings at about one and a half crore dāms. For arriving at this figure we have, looking at the enormous building activity which occurred under Akbar, assumed that the construction of at least one large-scale fort of the kind as at Allahabad was in progress all the time; and the construction of buildings, renovations and maintenance,[3] needed about half as much expenditure again.

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1. Inscription on the gate way of the Nagarnagar fort (Personal inspection). The text of the inscription as read by Pir Ghulam Husain Khuyhami in his Tarikh-i Hasan, Jammu & Kashmir Government Publication, Srinagar, vol. I, p.387, read "one crore, nine lakhs". I assume the amount is in dāms, not tankas. Rupees would, of course, be out of question.

2. Pelsaert, A Dutch Chronicle, p.21, Finch (1608-11), however, says, "It hath been fortie years building, and is not yet finished; neither is like to bee in a long time". He adds that Akbar employed 20,000 persons for many years; 5000 were still at work there when he visited the place (Early Travels, p.177).

3. Āīn, I, p.170, gives the costs of cleaning of wells in winter as well as summer.

Cash-Grants and Alms:

The Emperor granted cash allowances paid out periodically (daily, monthly, yearly) to various beneficiaries from the Imperial Treasury. These were called wazāif (plural of wazifa) and considered part of the suyūrghāl.[1] Now, the suyūrghāl consisted, in bulk, of the land grants called madad-i ma'āsh.[2] We have argued in Chapter VI that the figures in dāms that Abūl Fazl gives under the heading suyūrghāl in his Account of the Twelve Sūbas consists of the estimated revenue alienated through land-grants plus the total amount given in cash allowances. Abūl Fazl adds the total to the jama' to produce an enlarged jama', styled naqdi; we have, therefore, deducted the suyūrghāl figures to restore the actual jama'. This, however, does not mean that the amount paid in cash allowances can be excluded from our estimates of expenditure out of the Imperial Treasury. These amounts had still to be paid by the Imperial Treasury itself replenished from the income accruing from sources covered by the actual jama'.

1. Āin, I, p.197.

2. Ibid.

Unluckily, there is no means of judging from the Āin the total amount that was claimed from the treasury in the form of such cash allowances.[1] The land grants must undoubtedly have always formed an overwhelmingly large portion of the total suyūrghāl. I, therefore, take it that the amount of cash-allowances was probably 10% of the total suyūrghāl. Calculating on the basis of the entire suyūrghāl (excluding that of Berar) this would imply an expenditure of 1,00,79,647 dāms in cash allowances in 1595-96.

To this should be added an amount of, say, 25 lakhs to cover ad hoc cash-donations, alms and amounts spent at the time of the weighing ceremony (tuladān/wazn-i muqaddas). If such alms needed a separate treasury, of which Abul Fazl speaks,[2] the amount must have been considerable, say at least about 25,00,000 dāms. To avoid any false impression of precision we may, therefore, round off the total amount spent on cash-grants (wazāif) and alms of the latter kind at 1,25,00,000 dāms.

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1. The only hint of a ratio between the total suyūrghāl and cash-grants seems to come from the Mirāt-i Ahmadī (vol. I, p.26), which says that in Gujarat, 1,20,00,000 dāms; 50,000 bighas of arāzī; and 103 villages; and Rs.1,40,000 in cash from the treasury --- were assigned in madad-i ma'ash and inams. The actual ratio cannot be worked out since the amount of revenue alienated through 50,000 bighas of arāzī and 103 villages is not known. It is also possible that the total amount given in cash allowances might have increased under Aurangzeb as a result of the jiziya, or poll tax on non-Muslims, whose yield was largely reserved for this purpose.

2. Āin, I, p.197.

Miscellaneous:

There were two other departments belonging to the household establishments, viz., illumination (chiragh afrozi) and the drum-house (naqqar khana). The drums were used not only during military marches but also as a time-announcing device.[1] Though the Ain describes these departments,[2] it is not possible to work out the annual expenditure on the basis of the data provided for them.

There were other items too on which expenditure must have been incurred, such as perfumes and incense,[3] and occasionally on building of boats.[4] We have assumed that the annual expenses incurred on such miscellaneous items amounted to about 25,00,000 dams.

We may now attempt to compute the entire expenditure on the Imperial household establishments, by summing-up the various estimates which we have worked out above:

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1. Ain, I, p.46.
2. Ibid., I, pp.43-7.
3. Ibid., I, p.
4. Akbarnama, III, p.716. In the 41st R.Y. Rs.16,338 were spent on building a boat, tonnage more than 15,000 mans.

Harem	:	3,50,00,000
Kitchen, Abdār khāna etc.	:	1,25,00,000
Wardrobe	:	1,67,32,193
Material for encampment	:	1,03,71,182
Utensils	:	1,49,34,520
Trappings of animals	:	26,39,043
Books and paintings	:	67,53,940
Ornaments & gems	:	4,43,18,868
Hunting animals	:	1,30,00,000
Building construction	:	1,50,00,000
Cash-allowances & alms	:	1,25,00,000
Miscellaneous	:	25,00,000
Total	:	18,62,49,746

Putting it differently 4.592% of the total jama' was spent on maintaining the Imperial Household Establishment as defined by us.

Our conception of the Imperial Household is, however, at variance with that of Abul Fazl who has included animals and arsenal within it, while he has placed the hunting animals and cash-grants and alms under the 'Army'. According to Abul Fazl the total expenditure on the household (buyūtāt) in the 39th R.Y. amounted to 30,91,86,795 dāms.[1] Taking all

1. Āīn, I, p.9.

those items of expenditure that Abul Fazl counts under the household, or buyūtāt, our estimates total to 37,66,86,570 dāms[1] for the 40th R.Y. This is appreciably in excess of the amount given by Abul Fazl, the difference amounting to 6,74,99,775 dāms. The difference could, however, partly be explained by the fact that, as Abul Fazl says expressly, he does not count under the expenditure on the buyūtāt, the pay of "most of the officials of the buyūtāt", who were put on the rolls of the 'Army'.[2] The pay of such officials as held mansabs or were ahadis is also included by us under the mansabdārs and the army establishment. But the large number of clerks, artisans and labourers, who were, as Abul Fazl, explicitly says elsewhere, were on the rolls of the Army,[3] appear under the Household establishment in our estimates. We may recall that our estimate for the pay of foot-retainers on the rolls of the Army amounts to 6 crores of dāms. It is not unlikely that 'civil' or non-military lower staff (formally on 'Army' rolls) of the Imperial Establishment received an equal amount in wages and salaries, and this is

1. It comprises the expenses incurred on animals (viz., 19,38,58,567 dāms; arsenal (2,20,80,257 dāms); and the entire expenditure on the household calculated by us less the costs on hunting animals (1,90,00,000 dāms) and expenditure on cash-grants and alms (1,25,00,000 dāms).

2. Āin, I, p.9.

3. Ibid., p.190.

spread about concealed in our estimates for the expenses on various departments of the buyūtāt. If this was so, the difference between our estimate of expenditure and Abūl Fazl's figure for the expenses of the buyūtāt would be reduced to marginal proportions (a matter of 74,99,775 dāms). If our estimates had not been necessarily so often in the round and aspiring only to rough approximation, one could even have pleaded that such a difference could well occur between expenses of one year (the 39th, to which Abul Fazl's figure for the buyūtāt expenditure refers) and those of the next (the 40th, our own standard year).

Final Statement of Imperial Expenditure:

Our estimates of expenditure on the three heads, viz., the salary bill of the nobles; Imperial military establishment; and the Imperial household, may now be summarized and the entire expenditure set against the total effective jamaʿ of the Empire to see what portion of the revenue-income has been accounted for. The figures (in dāms) as established or estimated by us for 1595-96 are set out below:

A. Effective *jama'* in 1595-96: 4,05,57,39,222 *dams*

B. Expenditure

1. Salary bill of the *Mansabdārs*:

zāt salaries	:	82,74,55,200
sawār payment	:	2,14,06,43,040
allowances for animals under the *zāt* establishment	:	37,14,20,856
Total (1)		3,33,95,19,096

2. Imperial Military Establishment:

ahadī	:	8,10,79,200
piyadagān	:	6,00,00,000
animals		19,38,56,567
arsenal and armour	:	2,20,80,257
Total (2)	:	35,70,16,024

3. Imperial Household:

harem	:	3,50,00,000
kitchen and *abdārkhāna* etc.	:	1,25,00,000
wardrobe	:	1,67,00,000
material for encampment	:	1,03,71,182
utensils	:	1,49,34,520
trappings of animals	:	26,39,043
books and paintings	:	67,53,940
ornaments and gems	:	4,43,18,868
building construction	:	1,50,00,000
hunting animals	:	1,30,00,000
cash-allowances and alms	:	1,25,00,000
miscellaneous	:	25,00,000
Total (3)	:	18,62,49,746
Total of (1), (2) & (3)	:	3,88,27,84,866
4. Balance	:	17,29,54,356
Total of (B)		4,05,57,39,222

We find that the costs incurred on the salary bill of the _mansabdārs_ accounted for a very large part of the total effective _jama'_, viz., 82.34%, while the amount that went to maintain the Imperial household was a mere 4.59% of the total income. The entire Imperial expenditure, comprising the costs incurred on the Imperial Military establishment as well as household establishment, comes to 54,32,65,770 _dāms_, or 13.39% of the _jama'_. We may recall that our minimum limit for the size of the _khālisa_, out of which the Imperial expenditure was met, was 22% of the total effective _jama'_, that is 89,22,62,629 _dāms_.[1]

Our estimate of the Imperial expenditure are therefore, well within the income of the _khālisa_. Out of the remaining part of the income of the _khālisa_ the salaries of the _mansabdārs_, who were _naqdīs_, must have been paid.

The expenses on all the three heads combined accounted for 3,88,77,96,470 _dāms_ while the effective _jama'_ of the Empire in 1595-96 was 4,05,57,39,222 _dāms_. In other words, after meeting all the salary claims and expenses as estimated by us, Akbar's administration should have been left with 17,29,54,356 _dāms_, to be transferred to the Imperial

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1. See Chapter VIII.

hoard or cash reserves.

We may now remind ourselves that the range for the amount so transferred in 1595-96, has been estimated by us on the basis of the total amount held in cash and bullion, in 1605, as 15,50,26,822 to 18,85,28,830 dāms.[1] We now find that the savings for 1595-96 (17,29,54,356 dāms), resulting from our item-wise estimates of expenditure are well within this range.

Here, then, one estimate made by us is corroborated by a series of other estimates, so that both are to some degree reinforced. A third source of corroboration, for at least the size of savings, comes from Shāhjahān's court historian, Qazwīnī, whose history closed in 1638. He says that the Khālisa had been much reduced under Jahangir, but that Shahjahan (acc. 1628) enlarged it considerably so as to yield a cash income of 60,00,00,000 dāms; at the same time he restricted the annual expenditure from the Imperial treasury to Rs.1,00,00,000 or, in years when military campaigns were undertaken, to Rs.1,20,00,000. This gives us a range of annual expenditure of 40,00,00,000 to 48,00,00,000 dāms, and, therefore, that of savings of 12,00,00,000 to 20,00,00,000 dāms a

1. See Chapter VIII.

year.[1] It will be seen that the scale of annual saving which Shāhjahān was apparently able to achieve roughly corresponds to the level of savings we have estimated for 1595-96.

Our several leads, therefore, tie up. This does not, of course, mean that all our detailed estimates are of uniform reliability; but it, perhaps, does entitle us to say that, subject to adjustments of the more conjectural figures, the broad pattern of Imperial expenditure we have established from the large amount of direct and indirect data in the Āīn and other sources, may be accepted; and the implications this has for the structure of the Mughal-Indian economy may now be studied.

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1. Qazwīnī, Pādshāhnāma MS, Add 20734, pp.444-5, Or 173, f.221a-b.

Chapter XII

DIFFUSION AND CONSUMPTION OF THE SURPLUS

The way the Mughal ruling class spent the large share of the agricultural surplus that it appropriated could not but have crucial consequences for the whole economy. We have seen, in Chapter XI, that the nobility probably claimed over 82% of the effective jama', that is, of the net revenues of the Empire, which came overwhelmingly out of the agricultural surplus, containing, besides, small amount drawn from taxation of commerce and crafts. The expenses of the Emperor's personal establishment accounted for 13.04% of the jama'; the remaining 4.26%, according to our estimate, found its way into the Imperial treasure-hoard.

The next step is to explore the pattern of diffusion of the appropriated surplus. There are, theoretically, two possibilities: (A) The major proportion of the total expenditure of the Emperor and the nobles went to create and sustain a large, low-paid, service-sector and promoted the employment of large classes of persons (and animals) who simply ate away the agricultural produce carted from the

country to meet the revenue-claims of the ruling class. This would have conformed to the conditions envisaged by Irfan Habib for his 'Phase I'[1] (B) a substantial part of the income of the Emperor and nobles was spent on craft-goods. This would imply that a large section of the urban population (though in proportion to the rural population rather limited) was engaged in productive labour, so that the surplus obtained from the country was largely in the form of raw material for manufactures, with a much smaller part (in terms of total value) consumed as food and fodder. This would conform to Irfan Habib's 'Phase II'. Our attempt below is to venture a quantification on the basis of certain assumptions and hypotheses so as to discover which of the two possibilities - or 'Phases' - accord with the pattern of expenditure of the Mughal ruling class.

I

Since we happen to have our most detailed information about the pattern of the expenditure of the Emperor's own establishment (Chapters X and XI), we may adopt it as our

1. Irfan Habib, 'Potentialities of Capitalistic development in the economy of Mughal India', Enquiry, N.S., III, No.3, pp.24-5.

starting point for determining the direction in which the appropriated surplus was channelled, in the primary stage of diffusion.

On the basis of estimates already arrived at, we can say that out of the amount remaining with the Emperor, after meeting the pay-claims of the mansabdārs (viz., 71,62,20,126 dāms) almost one-half (49.85%) was spent on the Imperial military establishment; the entire household expenditure accounted for 26%; while 24.15% was transferred to the cash-hoard.

(a) Military establishment:

As one would expect, the war animals represented the heaviest charge upon the military budget by claiming 54.30%. The Imperial cavalry troops (ahadīs) drew 22.71%; the share of the foot-retainers was 16.81%; and the remainder, a mere 6.18% of the entire military expenditure, went towards additions to the arsenal and armour including cannon and muskets (Chapter X).

The amount paid in salaries to the foot-retainers directly contributed to a large population of the pure 'service' type. The majority of those employed in the military establishment obtained wages that seem to have been

a little above the subsistance-level. The ordinary archers, palanquin bearers, etc., received monthly wages of 100 to 120 dāms; the common gate-keepers, guards, mewrahs (runners), etc., 120 to 200 dāms; and musketeers, 110 to 300 dāms.[1] We may remind ourselves that the minimum wages paid by the Imperial administration were 2 dāms a day (60 dāms a month), which, as we shall see in Chapter XIV through a study of prices, were barely sufficient to purchase the required amount of inferior food-grains and meet, at the same time, the minimum needs of clothing. Those paid better than at those rates as the categories specified above, must have had something left to spend on comforts or, perhaps to save.

The expenditure on animals, broadly speaking, can be divided into three categories: (i) expenses on the animals' food and fodder; (ii) the amount spent on saddles, trappings, utensils, etc; and (iii) payments to keepers of animals. The costs incurred on the purchase of horses, a large number of which were imported, were also considerable (1.44 crore dāms per annum). Evidently, a part of the expenditure on animals, in the form of allowances to keepers of animals again went to enlarge the service sector. Here the wages were low: A groom received 45 to 63 dāms a month;

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1. Āin, I, pp.188-90.

a mahout 45 to 120, and his assistant 30 to 90 dāms.[1] The costs incurred on articles forming category (ii) above (saddles etc.) should have contributed to the craft-sector by creating employment for craftsmen. The sums spent on the purchase of horses too would have indirectly encouraged craft-production since the horses were mostly imported from Persia and Central Asia, and the import must have been paid through exports of high-value goods.[2] We may, therefore, say that a portion of the expenditure on animals was channelled into the service-sector and some part of it went to promote the craft-sector. But the major part of it, the expenses on fodder and fodder represented a direct consumption of the agricultural surplus, in physical terms.

Most of the expenditure on the arsenal and armour would have helped sustain craft-labour. Many weapons were manufactured in the Imperial kārkhānas; but the wages paid to the workmen by the administration, unfortunately, are not reported. It is, therefore, not possible to speculate upon

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1. Āīn, I, pp.177-78.

2. This argument would be modified if it could be shown that as during the Sultanate period the import of horses was paid for by an export of slaves to Central Asia and Iran (See Irfan Habib, 'Economy of the Delhi Sultanate', IHR, Vol. IV, part 2, pp.292-4). Craft-production would then not have been benefited at all by imports of horses. But slave trade of these dimension is not indicated by evidence from the Mughal-period.

the subsequent pattern of diffusion.

The way the share of the surplus reaching the cavalry troopers (ahadīs) was further diffused will be discussed in a separate section of this chapter, together with pattern of expenses of the cavalry employed by mansabdārs.

On the whole, we may say, that of the entire military budget (excluding the expenses on cavalrymen) approximately 45% went to service-sector (through the 6 crores spent on foot-retainers, to which about one-fourth of the costs of the maintenance of animals may be added). About one-fifth went directly or indirectly to sustain craft-production (in the form of expenditure on the arsenal, costs of purchase of horses and roughly a sixth of the maintenance costs of animals).

(b) Imperial Household:

We shall now examine the implications of the expenditure-pattern of the Imperial household. The estimates obtained in Chapter XI are restated here in terms of percentages of the total expenditure on the household.

Harem	18.79
Kitchen	6.77
Wardrobe	8.98
Building	8.71
Encampment material	5.57
Utensils	8.02
Trappings of animals	1.42
Books and paintings	3.63
Ornaments and gems	23.80
Hunting animals & pets	6.98
Miscellaneous	1.34
Cash-allowances	6.71
Total	100.00

The expenses on the wardrobe, encampment material, utensils and trappings of animals can be assumed to have been incurred largely on the procuring of craft-products. In the case of books and paintings where the line of demarcation between the craft and the art is, from a modern point of view, exceptionally difficult to draw, the expenditure can be seen as patronage of the arts (painting and calligraphy). But the art of painting (whether on paper or calico) was yet a craft; and so too calligraphy. For our present purpose, therefore, we have treated expenditure on these departments as expenditure on craft-goods.

The largest share in the expenses on the house-hold was on account of purchase of precious stones and ornaments. A part of this amount should have gone to create highly specialised employment: Artisans (or artists) here were paid rather handsomely: For instance, the fee for boring a single pearl, of class I was half a rupee.[1] The purchase of precious stones must have encouraged mining inside the Mughal Empire and in the Deccan (e.g. diamond mining). Even when the stones and gems were imported, payments made for them should have encouraged exports of craft-commodities.

The pocket allowances paid to the high-ranking ladies, constituted 72% of the total expenditure on the harem: Since these were in addition to the food supplied (which came under the Kitchen, a separate item) and wages paid to attendants and slaves, it may be held that these allowances were spent at least partly on the purchase of luxuries turned out by craftsmen (e.g. high quality silken and cotton cloth, ornaments, etc.).

The building industry accounting for a little over 8% of the house-hold budget must have employed a

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1. Āīn, I, p.12.

sizeable labour force, the bulk of which was paid subsistence-level wages. A small section of the workmen here, for example Carpenter grade I, were among the better paid workers (7 dáms a day)[1] and might have been able to have some extra amount for comfort goods or savings. But whatever the pattern of the secondary diffusion, the costs incurred on building construction can be regarded as expenditure on the craft-sector.

In this way, we find that about three-fourth of the Imperial household budget was so spent that it went to encourage the productive or craft-sector. The emphasis, however, was on highly skill-'consuming' articles (small quantities of high-value) or on rarities obtained with much wastage of unskilled labour (e.g. precious stones) or on buildings, absorbing both skilled as well as unskilled labour.

The remaining amount was largely funnelled into the non-productive serivce-sector. Only a small proportion was in the form of direct consumption of surplus (e.g., grain and meat for the kitchen and fodder and meat for hunting-animals). One-tenth of the total bill for the

1. Āīn, I, p.170.

kitchen went to pay the cooks' wages; the costs incurred on the abdārkhāna (water-department) too were mainly in the form of payments to various employees. In the allowances paid for hunting animals, the salaries of servants amounted to over three-fourths of the total.

The 4000 women belonging to the harem and getting on an average Rs.5, that is 400 dāms a month (in addition to food) could have only enlarged the army of servants, employed unproductively. Over a quarter of the total amount laid out for paying allowances to the inmates of the harem should thus be categorised as expenditure on the service-sector.

The share allotted to the head 'miscellaneous' was mainly the amount paid to servants in some minor departments and so was of the same kind, encomically speaking, as the expenditure on the low-paid harem attendants - a primitive form of service-sector employment.

The cash-allowances to the needy and devout, worth 6.71% of the total household budget, cannot be easily categorised. One could, perhaps, say that these went to maintain an economically unproductive population: Where the recipients lived at subsistence level, it did not do any-

thing more; where the recipients had larger incomes, they might have spent them on comforts or servants. But the generation of demand for craft-goods through what these charity-receivers spent, could not have been large. As a whole, therefore, Imperial charity might be thought to have sustained mainly the service-sector.

(c) Hoarding:

A quarter of the share of the Emperor in the surplus was transferred to the cash-treasury. Over 95% of this hoard consisted of gold and silver, coins as well as bullion. The hoarding of precious metals had its own implications for the economy. The bullion came only through imports, chiefly from Europe (via the middle East or around the Cape of Good Hope); and the imports had to be paid for through exports. The export commodities from the Mughal Empire were mainly high-value goods, whether processed agricultural or semi-agricultural goods (like indigo, saltpetre, or silk) or craft products (like muslin and chintz). Any hoarding of bullion through purchases on the market (and this according to our estimate should have amounted to 4.26% of the jama) must then have induced exports of craft-goods to a considerable degree.

II

We may now pass on to analyse the consumption pattern of the expenditure of the *mansabdārs'* income. The nobility, claimed a large share in the extracted surplus: Even the allowances paid for the personal maintenance (the *zāt* salary) being distinct from the amount paid to meet the military obligations (the salary against the *sawār*-rank), absorbed 20.4% of the entire *jama'*. The amounts paid for the maintenance of animals under the *zat* rank were in addition to these two payments.

Our next concern is to consider how this huge amount (82,74,55,200 *dāms* in 1595-96) reaching the nobility was funnelled into the economy. Except a few qualitative statements, no statistical data are forthcoming from our sources about the proportions in which the *mansabdārs* incurred expenses on different items of their personal establishments. We can, however, construct a hypothetical pattern on the basis of certain assumptions. First of all, we can take it that the Emperor's life-style conformed to the ideal set by the habits, fashions and pleasure formed by the existing cultural traditions of the nobility. For instance, the harem, the animals, the

palace, the food, the habit of employing large retinue of servants, the propensity to hoard were all features as prominent in the life-style of the noble as of the Imperial Court.[1] We can, therefore, infer that the major items of expenditure in the nobles' household were identical with those of the Imperial:[2] Only the ratios of expenses on each may have varied, for Engel's law must have operated as much then as in modern societies.

Under this 'law' the proportion of income spent on necessaries declines with every increase in income, while that on comforts and luxuries increases. To apply

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1. This may be seen from the very interesting account of the way the Mughal nobles lived, given in Pelsaert's Remonstrantie (1626), tr. Moreland and Geyl: the harem (pp.64-66); animals (p.54); palace (pp.66-67); kitchen and food (pp.64-5, 67-8); servants (pp.61-3); hoarding (pp.54-56). The description shows that in almost every particular, the noble's household presented a small replica of the Imperial household as described by Abūl Fazl. See also Bernier, p.213. The Bayāz-i Khushbūī, I.O. 828, a work written in the first two decades of Shāhjahān, gives in detail all the requirements of an aristocratic household. Of special interest to us is the description of 'food and kitchen' (ff.96a-102b), buildings and orchards (ff.108a-110b), wardrobe and encampment material (ff.130b-134a), library (ff.137b-139a), animal stables (ff.126b-130a) and arsenal (ff.135b-137a).

2. The income out of which expenses were incurred on the noble's household, was drawn against the zāt-ranks. But out of this salary the nobles had to provide for certain items of expenditure which we have not included under the Imperial household. He had to maintain his arsenal and armour, non-military foot-retainers and some personal animals. The per centage of the Imperial expenditure are thus accordingly recalculated and are given in Table I.

Engel's law we have, thus, to divide all the heads of expenditure into three broad categories, namely, necessaries (N); comforts (C); and luxuries (L). The significance of each of these terms is, of course, relative; and the boundaries between them tend to be blurred and to vary; the classification must, therefore, always be subjective in nature. If we suppose that Engel's Law operated from the Emperor downwards, then we must assume that, in spite of the Emperor's life-style being the ideal of the entire nobility, the ratios of expenses on corresponding items could not have been the same, but must have varied, those on N rising as the income declined. In order to have such variations reflected in our estimates of the nobles' expenses, we must, therefore, first attempt a division of the Imperial household-expenditure into N, C and L. This is done in Table I, which is based on descriptions already offered in earlier Chapters.

Table I (next page)

To fix the proportions of expenditure on the three categories, N,C, and L, the <u>mansabdārs</u> too have to be divided into various classes according to their

Table I

	Items	% of Total Expenditure	N	C	L
1.	Kitchen	5.50	0.50	0.20	0.30
2.	Encampment material	4.56	0.15	0.35	0.50
3.	Building	6.60	0.15	0.30	0.50
4.	Wardrobe	7.36	0.10	0.45	0.45
5.	Harem	15.40	0.05	0.45	0.50
6.	Foot-retainers	8.47	0.05	0.45	0.50
7.	Arsenal and armour	9.71	0.05	0.45	0.50
8.	Beasts of burden	2.67		0.25	0.75
9.	Utensils	6.57		0.25	0.75
10.	Books	2.97		0.25	0.75
11.	Gems and ornaments	19.50		0.25	0.75
12.	Display animals	2.70			1.00
13.	Hunting animals and pets	1.16			1.00
14.	Hunting animals and pets	5.72			1.00
15.	Miscellaneous	1.10			1.00

incomes. We have here followed a division of nobles, officials, and others into seven classes, adopted by Akbar's administration

itself when it imposed levy on marriages.[1]

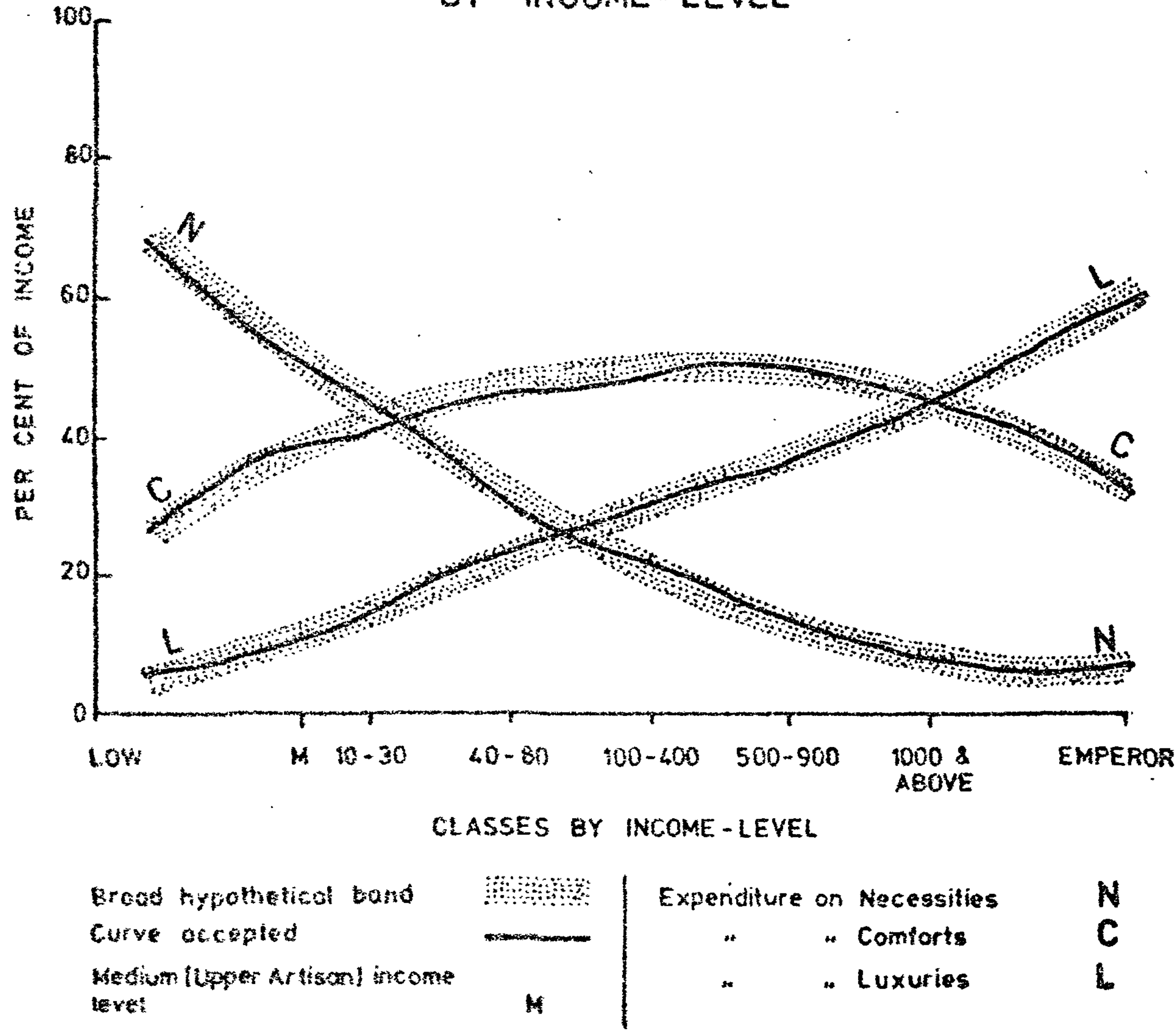
The ratios of expenditure on N, C, and L are fixed on the basis of Figure 1, which translates Engel's law into hypothetical curves with the slight modification that in the very high income levels the proportion of expenditure on comforts declines being counterbalanced by an increase on luxuries. Our Table II gives the classification of the mansabdārs and officials as well as the proportions of expenditure on N, C, and L as fixed by us in broad conformity with the curves in accompanying Figure 1.

Table II

Category	Income[2] Rs./month	N	C	L
Emperor	9,31,843	7	31	62
Rank of 1000 & above	60,000-8,000	9	45	46
,, 900 to 500	7,700-2,100	13	50	37
,, 400 to 100	2,000- 500	22	48	30
,, 80 to 40	410- 185	30	46	24
,, 30 to 10	175- 75	45	40	15
"Middle Class"	18- 8.6	50	39	11
Common People	5.25 and below	75	21	4

1. Āīn, I, p.201. The mansabdārs are divided into (i) those holding the rank of 5000 to 1000; (ii) those holding ranks up to 500; (iii) below 500 to a sadi (holding rank of 100); (iv) below 100 to the rank of 40; (v) from tarkashbands (mansabdārs holding the rank of 30) to dahbashi (holders of 10). The other two categories are: miyana mardum (middle class people) and Ama (common men). Mansabdārs of above 5000 were apparently exempted from the levy; but I have included these mansabdārs (which included Princes) under category (i).

2. The income of the mansabdārs are based on the Āīn's pay-schedule (Āīn, I, pp.180-86) and those of the ahadis and tābinān ("common people") are as calculated by us in Section IV.


ASSUMED PATTERN OF EXPENDITURE
BY INCOME-LEVEL
PER CENT OF INCOME
100
80
60
40
20
0
N
C
L
L
C
N
LOW
M
10-30
40-80
100-400
500-900
1000 & ABOVE
EMPEROR
CLASSES BY INCOME-LEVEL
Broad hypothetical band
Curve accepted
Medium (Upper Artisan) income level
M
Expenditure on Necessities
N
" " Comforts
C
" " Luxuries
L

Ch XII

Fig I

The incomes of the mansabdārs belonging to various classes have already been computed (Chapter IX, Table II). We have now to estimate what proportions of these incomes were spent on the items considered in Table I and what were the other burdens, constant or varying, on their salaries. First, a substantial part of their income must have been saved and hoarded, notably in the form of coined and uncoined gold and silver. The transfers to the hoard accounted for 24% of the total budget of the Imperial household. The nobles, as Pelsaert tells us, were also great hoarders of wealth;[1] but, of course, the proportion of income available for addition to their hoard must have been smaller. These proportions, for the five classes of the mansabdārs, have been assumed to be respectively 20%, 18%, 16%, 14% and 12% of the total personal salary. These assumptions, to the extent of their precision, are naturally arbitrary; but the trend itself should be incontestable.

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1. Pelsaert, Remonstrantie, p.55. One can get an idea of how much was hoarded by the nobles from the fact that in 1645 the Emperor acquired 6 millions in cash from a deceased noble's property, while another left behind 10 millions in cash and goods (1657). Cf. Irfan Habib, 'Potentialities of Capitalistic Development etc.', p.32.

Secondly a part of the earnings of all the mansabdārs was paid out in charity. We have assumed the traditional zakat rate of 2.5% (one in forty) for such expenditure. Thirdly, we have allowed a very small per-centage (1% of the income) for the presents and offerings (nazr) made to the Emperor. Since this amount has not been taken into account by us in the Imperial expenditure, it has to appear here.

The total estimated net income for each class of nobles remaining after these deductions is given in column 2 of Table III, together with savings in column 3. Thereafter the expenses under N, C, and L are set out in columns 4, 5 and 6 as computed on the basis of ratios fixed in Table II.

Table III

1 Category	2 Effective-income	3 Savings	4 N	5 C	6 L
Rank of 1000 and above	34,53,14,880	9,02,78,400	3,10,78,339	15,53,91,696	15,88,44,845
Below 1000 to 500	7,43,42,640	1,70,46,720	96,64,543	3,71,71,320	2,75,06,777
Below 500 to 100	14,73,88,416	2,92,94,592	3,24,25,452	7,07,46,440	4,42,16,525
Below 100 to 40	5,88,29,760	99,83,232	1,76,48,928	2,70,61,690	1,41,19,142
Rand of 30 to 10	2,27,80,524	32,35,104	1,02,51,236	91,12,210	34,17,079
Total	64,86,56,222	14,98,38,048	10,10,68,498	29,94,83,356	24,81,04,368

Withe the ratios of various heads in N, C, and L in hand (Table I) the total expenditure on various individual items by the mansabdārs can now be computed by a mere exercise of arithmetic (using the ratios established for the various items of expenditure in Table I). These in absolute figures are laid out in Table IV.

Table IV

Items	Annual Expenditure (dāms)
1. Kitchen[1]	5,78,82,693
2. Encampment material	3,46,67,901
3. Building	4,69,91,899
4. Wardrobe	5,61,43,535
5. Harem	10,91,86,529
6. Foot-retainers	6,00,52,590
7. Arsenal and armour	6,80,44,234
8. Beasts of Burden	1,44,83,065
9. Utensils	3,56,38,104
10. Books and Paintings	1,61,10,376
11. Precious stones and jewellery	10,57,75,193
12. Display animals	1,88,40,476
13. Animals' Trappings	46,57,390
14. Hunting and pet animals	2,29,65,749
15. Miscellaneous	44,16,490
16. Charity	2,06,86,380
17. Nazr	82,74,552
18. Savings	14,98,38,048
Total	82,74,55,200

1. It may be noted as an interesting corroboration of our assumption of basic similarities in life-styles of the Emperor and the nobility that, according to Pelsaert (Remonstrantie, 67-68), each noble's household had one large kitchen, separate from the harem: Food went from the kitchen to the apartments of each of the noble's wives who had her own establishment.

It would now be desirable to enquire into the economic character of this diffusion. As stressed by us while discussing Imperial household expenditure, the amounts incurred on the wardrobe, encampment material, building, arsenal and armour, gems and jewellery, utensils, books and paintings, trappings of animals and a third of the expenses on harem[1] should have gone directly to promote craft-production. The amount which was hoarded as well as that which, being paid in nazr, in turn, became a part of the Imperial hoard was kept in the form of gold and silver (coined and uncoined) and must have been built-up mainly by acquisition of bullion. Again, since gold and silver were almost entirely imported, these must have been paid for partly, at least, by export of high value craft goods.

In this way we find that in all 56,75,57,332 dāms, that is, 68.591% of the entire amount paid as personal salaries to the nobles, went in various ways to support the craft-sector. This is certainly a larger proportion than one would have expected. But since the emphasis was on quality rather than quantity, the volume of production in physical terms might not have been large.

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1. Representing the amount spent by the ladies of the harem on craft-made articles (comforts as well as luxuries).

The proportion of the nobles' income that was funnelled into the service-sector seems to have sustained a large entourage of unproductively employed labour. In a noble's harem, says Pelsaert, every wife was attended upon by 10 to 100 maid-servants.[1] This duplicated, on a minor scale, the pattern of the Imperial harem, where 4,700 women served 300 ladies of the Imperial family. Pelsaert's description shows that the noble's retinue, excluding the harem, also contained an exceedingly large number of servants. Some were employed simply for display, or to keep running before their masters' horse; these were in addition to the farrāshīs (tent-pitchers), mashálchīs (torch-bearers), runners to convey messages, palanquin-bearers and an number of other attendants.[2] In addition, there were the keepers of animals. By and large we can assume that the service-sector was supported by the same heads of expenditure (or proportions therefor) of the budget of the nobles' household as of the Imperial household, identified above by a scrutiny of the Āīn's description of the

1. Pelsaert, Remonstrantie, p.64.

2. Ibid., pp.61-62.

Imperial Establishment.[1] The sum given away in charity being part payment to unemployed persons or gentlemen-idlers also maintained what was in essence an unproductive sector. On the whole, then, 15,35,02,716 dāms, i.e. 18.55% of the total personal income of the nobles, may be supposed to have been channelled into the service-sector. The proportion was not high, but, as Pelsaert remarks, wages too were very low, and therefore, the number of those employed out of a relatively smaller share of the nobles' income could still have been "exceedingly numerous".[2]

A part of the appropriated surplus received by the mansabdārs in allowances for animals maintained against the z̤āt rank was also partly channelled into the service-sector. The detailed break-down of the sanctioned costs of maintenance provided by Abūl Faẓl indicates that, on an average, around a quarter of the allowance was set aside for salaries of the animal-keepers.[3]

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1. Thus, I have assumed that the following items went to support of employment of service-labour; (i) one-third of the expenses on the harem; (ii) two-thirds of that on hunting animals; (iii) one-fifth of the costs incurred on display animals and beasts of burden; (iv) one-eighth of the kitchen expenses; (v) the entire amount spent on 'miscellaneous'; (vi) and the entire sums paid to the foot-retainers.

2. Pelsaert's words (Remonstrantie, p.61).

3. Āin, I, pp.176-178.

It seems that we can work out the number of employees paid out of this amount. According to the schedule given in the Āīn-i Akbarī, which sets out the number of horses, elephants, camels, mules, and carts to be maintained under the ẕāt establishment by the mansabdārs of various ranks,[1] the number of animals maintained by all the mansabdārs in service in 1595-96, works out at 51,842 horses; 7,709 elephants; and 23,730 camels. There should in addition have been 10,400 carts. We may allow one groom to a horse and one sweeper and one water-carrier for the stable of, say, 20 horses; and as prescribed by the imperial administration, three attendants for each shergīr, sāda or manjhola elephant (such elephants numbering 5,164) and two for each karra or phundarkiya elephant (there being 2,545 such elephants); one keeper (sārbān) for a camel; one for a mule;[2] and one driver (bahlīwān) for each cart. The total number of animal keeper and cartmen, employed by all the mansabdārs would then add-up to 84,390. The entire amount paid in their salaries being 9,28,55,214 dāms (one-fourth of 37,14,20,856 dāms) per annum, their wages on an average should have come to about 92 dāms a month. The sanctioned wages, as we have seen, varied

1. Āīn, I, pp.180-186.

2. To provide one keeper for a mule may suggest an excessive degree of care for a mule; but see Āīn, I, p.177, where this is recommended.

from 45 to 120 dāms/a month; and our average rate derived from our estimate of the number of persons employed thus falls very reasonably within the range.

One-sixth of the total maintenance costs of the mansabdārs' animals must have been directly spent on craft-produced commodities (like saddles, reins, chains, buckets, etc.) while the costs incurred on purchase of imported horses again can be regarded as an indirect inducement to craft-production. Assuming the working life of a horse to be 12 years[1] and the average prices to be 15 muhrs (10 muhrs being the minimum price of a horse belonging to the Imperial stables), the total cost of replacement of horses annually should have been about 1,16,64,450 dāms. That is, on the whole 7,35,67,924 dāms or about 20% of the total allowances on animals, must have gone towards purchasing craft goods and horses.

III

To get a complete pattern of diffusion of the surplus, it will be necessary to enquire into the way the Imperial cavalrymen (aḥadīs) and nobles' horsemen (tābīnān) consumed their

1. See Chapter X.

income from salaries paid to them. The Mughal cavalrymen were gentlemen-troopers having fairly large establishments with retinue of servants.[1]

The ahadīs and the tābīnān can be taken to belong to Abūl Fazl's category of "middle-class". Applying the ratios worked out in Table II for this category, we can reconstruct their pattern of expenditure. But while in the case of the ahadīs, who were Imperial servants, we may assume that all of them were paid in cash and were quartered in towns, this cannot be assumed for all the tābīnān, some of whom were paid by their aristocratic masters through subassignments of portions of jāgīrs.[2] They, therefore, might well have 'lived off' the land', their income representing a more or less direct consumption of the agricultural surplus. We may, perhaps take it, however, that not more than one-fourth of the cavalrymen could have been holding subassignments in this fashion: Indeed, this would appear to be an allowance for subassignment that may be purely arbitrary.[3]

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1. Pelsaert, Remonstrantie, p.61; Manucci, II, 75n; Cf. Irfan Habib, 'Potentialities....', op. cit., p.29.

2. Cf. Irfan Habib, Agrarian System of Mughal India, pp.285-6.

3. Had a few sample studies of the size of jāgīrdārs' own khālisa within their jāgīrs were available, this point could perhaps have been clarified.

The amount received by all the ahadis in 1595-96, in personal salaries works out at 2,65,96,944 dāms; the remaining 5,44,82,256 dāms were to be spent on their horses (The detailed calculations are set out in the Appendix to this Chapter). The sum paid to all the tābīnān collectively in personal allowances was 66,35,13,312 dāms. We have assumed above that, at a minimum, three-fourth of them must have been stationed in towns. This implies that at least 49,76,34,984 dāms flowed into the urban economy through this conduit. The total personal income of the ahadis and half the tābīnān adds up to 52,42,31,928 dāms. Assuming that these gentlemen-troopers 'about town' saved 10% of their income, gave 2.5% in charity, and 1% in nazrs to their superiors, the balance spent by them should have been 45,34,60,618 dāms. Using the ratios set out in Table II, the expenditure on necessaries, comforts and luxuries, out of this amount, works out at 22,67,30,309 dāms, 17,68,49,641 dāms and 4,98,80,668 dāms, respectively. Proceeding in the same manner as for the nobles, we can now estimate the total expenses incurred on various items by the cavalrymen.

Table V (next page)

Categorising the expenditure on various heads on the same lines as for the nobles, we find that 32,29,38,973 dāms,

Table V

	Item	Amount
1.	Food/Kitchen	9,87,71,354
2.	Encampment material	3,36,13,895
3.	Building	4,67,70,705
4.	Clothing/wardrobe	4,59,51,983
5.	Harem	7,12,43,609
6.	Attendants/Foot-retainers	3,91,83,985
7.	Weapons and Armour	4,49,20,484
8.	Beasts of Burden	54,21,143
9.	Utensils	1,33,39,665
10.	Books, etc.	60,30,259
11.	Gems and Ornaments	3,95,92,614
12.	Display & hunting/pet animals	67,96,644
13.	Trappings of animals	9,36,355
14.	Miscellaneous	8,87,923
15.	Charity	1,31,05,798
16.	Nazr	52,42,319
17.	Savings	5,24,23,193

that is, 61.602% was spent directly or indirectly on craft-products and 10,91,23,404 dāms, or 20.816% went towards service sector employment, while the remainder represented a direct consumption of the agrarian surplus.

The total amounts which were given in allowances for horses were: 5,44,82,256 dāms to the ahadīs, and 1,47,71,29,728 dāms for the tābīnān. A part of these amounts must have been spent on the purchase of horses, whether these were procured by the cavalrymen themselves or were provided, in the first instance, by their employer (the Emperor, in the case of ahadīs, and nobles, in that of the tābīnān), with deductions made later from their salaries.[1] If the working-life span of a horse was, on an average, 12 years, then 24,404 horses must have had to be purchased every year. The average price of a horse may fairly be put at 7.5 muhr;[2] if so, 6,58,86,750 dāms must have been spent on procurement of horses. It is possible that many horses of the cavalry of this level were not imported, but bred from imported horses, or procured from horse-breeding areas within the Empire.[3] But even if the number of imported horses was

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1. Āīn, I, pp.187, 196.
2. See Chapter X.
3. For these see the Āīn, I , pp.140-141, 177.

less than a half of the total, the higher prices they fetched makes it unlikely that they accounted for less than half of the total cost of annual procurement of cavalry horses. For reasons already discussed, this amount (3,29,43,375 <u>dāms</u>) must then have gone quite largely to promote craft sector/for whose products a market was created by such imports.

After deducting the costs of purchase of horses the amount for maintenance of horses left with the <u>ahadis</u> was 5,20,65,756 <u>dāms</u> and that left with the <u>tābīnān</u> 1,41,36,58,128 <u>dāms</u>. Of the latter, we have to allow up to one-fourth as belonging to cavalrymen feeding their horses in their rural sub-assignments. For the maintenance of the town based cavalry, then, we are left with 1,11,23,09,352 <u>dāms</u>.

According to the detailed break-down of the allowances sanctioned for the maintenance of Turki horses, which the <u>tābīnān</u> usually maintained, 60% was to be spent on food and fodder, 20% on the payment to the groom and 20% on saddle, trappings etc.[1] On the basis of this distribution, we can say that 22,24,61,870 <u>dāms</u> went towards the wages of low-paid unskilled labour. An equal amount was spent on craft-products for the equipage of the horses.[2]

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1. <u>Āīn</u>, I, p.177.
2. However, sometimes a part of salary was paid in form of old trappings etc. from the Emperor's or nobles' stables. (<u>Āīn</u>, I, pp.187, 196; Pelsaert, <u>Remonstrantie</u>, pp.62-63).

IV

We may now sum up our estimates of the portion of the appropriated surplus which went towards supporting employment in the service sector as well as that which was channelled into the craft-sector (Table VI).

Table VI

	Craft-sector	Service Sector
Imperial Expenditure:		
Out of army expenditure	5,43,89,685	10,84,64,142
,, ,, household ,,	12,24,16,413	3,78,33,333
Savings	17,29,54,356	
Total	34,97,60,454	14,62,97,475
Expenditure from Nobles' income:		
Out of Personal pay	56,75,57,332	15,35,02,716
,, ,, Allowances for animals	7,35,67,924	9,28,55,214
Total	64,11,25,256	24,63,57,214
Expenditure from Cavalrymen's Income:		
Out of Personal pay	32,29,38,973	10,91,23,404
,, ,, Allowance for horses	25,54,05,245	22,24,61,870
Total	57,83,44,218	33,15,85,274
Grand Total	1,56,92,29,928	72,42,39,963

The estimated expenses on craft-production thus amounted to 38.692% of the jama'. The share that directly found its way into the service sector accounted for 17.857%. The remaining 43.451% seems to have taken in the form of a direct consumption of agrarian produce.[1]

This distribution of surplus suggests that the proportion of the jama' that went directly to create employment for unproductive labour was not very large being a mere 18% of the entire extracted surplus. But, of course, this does not imply that the size of the unproductively employed labour was small. We must keep in mind the low wages while hazarding any estimate for the size of the 'service-class'.

The part of the revenue-income which was spent on craft products was considerable - more than one-third of the jama' of the Empire. But while the investment on craft-goods was rather larger than one would have expected, it did not necessarily contribute to the production of large quantities of commodities. Rather, the demand was for goods of high value (being products of high skill or rarities, e.g. precious stones) obtained by deployment of large amount of labour.

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1. The share would, however, be smaller if we assume that less than 50% of the nobles' cavalry held rural sub-assignments.

Putting it differently, we can say that there was yet no "home-market", representing effective demand for large amounts of manufactured goods of moderate values.[1]

The amount that went into the urban service-sector and the portion of the agricultural surplus consumed directly took in all some 65% of the jama'. This perhaps indicates that the conditions obtaining in the Mughal Empire were more akin to 'Phase I' than to 'Phase II' of the hypothetical economic organisation we had considered at the beginning of this Chapter. In other words, the distribution of the surplus took place according to a pattern in which a major part of the surplus drawn took the shape of food-crops and fodder, and maintained a population unconnected with non-agricultural production. The basis for any real accumulation of capital out of agriculture could not yet, therefore, have arisen.

At the same time, our estimates offer us some indications for the basis of the size and character of the urban economy. In our estimates the service sector considered is totally urban, and so also, more or less, the craft sector.

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1. This is, of course, the Marxian, and not the popular definition of the term 'home-market'. I know of no other term which can stand for the sense I have in mind here.

We can thus say that at least 56.549% of the entire *jama'* went to sustaining the urban sector. This will present us with the starting point for our next Chapter, in which we shall consider the size and character of the urban economy in Mughal India.

Appendix

Ahadis:

The total number was 4,441, out of which 741 were chahār-aspa, 1322 sih-aspa, 1,428 do-aspa and 950 yak-aspa. The horses maintained were Turki and Yabu; the allowance sanctioned for the maintenance of a Turki horse was 6,720 dāms and for yabu, 5,760 dāms per annum. The ahadis personal allowance was 3,840 dāms a year for all, but the savings on first horse has been estimated at 5%; on second 15%; on third 25% and on 4th 30% (see Chapter X). The total of personal salaries computed accordingly are given below:

Personal salary in dams	Number of ahādis	Total (in dāms)
8,688	741	64,37,808
6,672	1,322	88,20,384
5,216	1,428	74,48,448
4,128	950	39,21,600
Total	4,441	2,66,28,240

Since the total estimated expenditure on the ahadis was 8,10,79,200 dāms per annum the total allowance left for horses comes to 5,44,50,960 dāms.

Tābīnān:

The total estimated sawār rank against which salary was paid was 1,88,070. Out of this a third has been assumed to be dāghī and two-thirds barāwurdī. This implies that the number of cavalrymen, actually maintained, was at least 1,41,053. The tābīnān usually maintained Turki horses (Chapter IX). If we assume the standard composition of 3 sih-aspa, 4 do-aspas and 3 yak-aspa, then with the same allowances and assumptions as for the ahadīs the tābīnān's total personal incomes can be calculated as follows:

	Number	Salary	Total income
sih-aspa	42,316	5,280	22,34,28,480
do-aspa	56,421	4,704	26,54,04,384
yak-aspa	42,316	4,128	17,46,80,448
Total			66,35,13,312

The total salary against the sawār-rank, in 1595-6, works out at 2,14,06,43,040 dāms (Chapter IX). Deducting from it the personal allowance for the tābīnān calculated above, the maintenance allowance for horses would come to 1,47,71,29,728 dāms.

THE URBAN ECONOMY

ID THE MONEY SUPPLY

Chapter XIII

THE EXTENT OF URBANIZATION

I

The Size of Urban Population, And the Value of Manufactures

As is widely recognized, the Mughal ruling class was almost entirely town-centred. Though it was on the expropriation of a large portion of the agricultural surplus that the Mughal ruling class depended for its income, the jāgīrdārs and their retinue seldom directly lived 'off the land'. The jāgīrdārs, being service assignments, were not hereditary, and the system of transfer of posts and jāgīrs was deliberately designed to prevent the development of any local roots.[1] The relationship between the jāgīrdār and the villages in his jāgīr consisted almost entirely in this that he extracted the bulk of the peasant's surplus in the form of

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1. The watan jāgīrs (and the altun-tamgha grants instituted by Jahāngīr) were exceptions, and might be thought to represent a possible beginning of ruralization; but these assignments remained limited in extent.

land-revenue, realizing it mostly in cash. His own establishment, household as well as military, was usually quartered in the towns. The net revenue realized (the jama') was thus largely drained away from the countryside.

It has, therefore, been suggested that the extent of urbanization in the economy of Mughal India, can be established from the size of the economic drain from the countryside and the way it was distributed.[1] As has already been stressed (Chapter IV) the peasant had to part with about half of the value of his produce to satisfy the land-revenue demand.[2] But not all of the produce extracted as revenue was lost to the rural sector. A significant part of the gross revenue realization, comprising the share of the zamindārs (20 %)[3] and of the other local potentates, the village headmen, the patwāris, etc. (7%)[4] was perhaps almost entirely retained in the countryside.[5] A major

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1. The device has been theoretically projected by Irfan Habib in 'Potentaialities of Capitalistic Development, & c.' Enquiry, N.S. III (3), pp.22-35.

2. This has been determined for the central regions: Elsewhere the ratio varied, both according to region as well as according to crops. But one-half was regarded as the general or standard rate in most parts of the Empire. See Irfan Habib, Agrarian System, pp.219-30.

3. Vide infra Chapter VII.

4. Vide infra Chapter V.

5. Slight qualifications to this are discussed later in this chapter.

portion of the cost of collection accounting for 20% of the gross realization,[1] must also have been spent in the villages. The net revenue, the jamaʿ (J) reaching the Mughal ruling class should, therefore, have amounted to about 53% of the gross revenue realization, which upon our inference, should have been equal to 26.5% of the total produce.

The consumption-pattern of the Emperor and the ruling class as reconstructed in Chapter XII suggests that in 1595-96, about 18% of the jamaʿ (i.e. 72,42,39,963 dāms in absolute figures) was spent directly on wage-payments in the service sector. This amount paid out initially to the persons unproductively employed must, in its turn, have generated a large amount of urban employment in the productive sector to meet their minimum needs for cloth and other goods. Here, of course, the numbers would have been much larger than those initially receiving wages, owing to the 'multiplier' effect of the demand initially generated.

In addition, out of the 1,56,92,29,928 dams directly spent on craft-commodities, some portion must have gone to maintain the producers essentially at a subsistence-level. It

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1. Khulasatu-s Siyāq, Br. Mus. Add 6588 collated with Or 2026, ff.79a-b.

is naturally difficult to determine the precise portions of the components of raw material and value added by labour, in the total expenditure on craft-goods. Nevertheless, some rough indications can be used to work out an approximate ratio. Pelsaert tells us of articles made of silver and gold which were generally in demand (like bed-steads, fan-handles, dishes, cups, betel boxes, etc.) that, "provided the workmanship is good, half the silver might be paid for manufacture."[1] This implies that even in the case of high-value goods made of silver the cost of labour (in this particular case, of craftsmanship) could amount to a third of the total value. This may, by its context, be taken as the floor of the share of labour in the value of manufactures. For the ceiling, let us take coarse cloth. According to data collected by Buchanan early in the 19th century the cost of yarn accounted for 72.6% of the total value of coarse cloth,[2] while the price of uncleaned cotton used amounted to 44.3% of the total value of yarn.[3] In other words, starting from the point when cotton left the peasant

1. Pelsaert, Remonstrantie, p.27.

2. F. Buchanan, An Account of the Districts of Bihar and Patna in 1811-1812, Vol. II, Patna, 1928, pp.774.

3. Ibid., Vol. I, pp.536-7.

household, the basic cost of raw material in cloth was 32.162% of the value of the end-product; and that of labour, 67.838%. This, since we are here speaking of a low-priced product only, may serve as the ceiling for the share of labour in the cost of manufactures: The range of the share of labour thus varied from about one third to two-thirds of the total costs. We should, therefore, not be far wrong in assuming a parity between the cost of labour and the value of raw material in manufactures as a whole.

One-half of the amount spent on craft commodities (viz. 78,46,14,964 dams) may therefore, be assumed to have been spent on providing wages to the workmen. This together with the amount spent on the service sector, would take the sum spent, out of the net agricultural surplus reaching the ruling class, upon maintaining the urban population at 1,50,88,54,927 dams.

Besides this, the rural potentates too must have spent some amount, however small, upon urban manufactures such as superior-quality cloth woven in towns, jewellery and, smith-finished weaponry.[1] Even silver and gold hoarded by them too

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1. Buchanan mentions that there was a group of blacksmiths in towns making swords, spears, knives and guns specially for rural markets, (Montgomery Martin, Eastern India, Vol. II, Indian reprint, Delhi, 1976, pp.260-266).

would have resulted in an increase in urban craft-production in so far as bullion imports into the country induced craft-exports. Keeping in view the fact that around 40% of the income of the Mughal ruling class was channelled into craft-production, it would not be unreasonable to assume that out of the total income of the rural potentates the expenditure on urban manufactures and the amount of silver and gold acquired should have amounted to about one-tenth, at the very least.

Since the effective jama' of the Empire in 1595-96 works out at 4,05,57,39,222 dāms, this (being 53% of the gross realization) would, in turn, imply a gross land-revenue realization (J') of 6,88,71,04,339 dāms. The share of the headmen etc. collectively, was 27% of J', that is, 1,85,95,18,172 dāms. Under the suggestion just made above, up to 90% of this amount (1,67,35,66,354 dāms) could have been consumed in the country-side, and the remaining 18,59,51,817 dāms (10%) transferred to the urban sector by direct and indirect conduits. Assuming a parity between the cost of raw material and the value added by manufacture, we may estimate a net addition of 9,29,75,909 dāms for the sustenance of urban population arising from the demand for urban goods by the zamīndārs and other rural potentates.

The amount sanctioned to the 'amils as cost of collection would have partially been consumed in the villages as payments to

the sih bandis (seasonally employed local levies) and other local staff. But the 'amil, whether he was an Imperial official (in the case of the khālisa) or an employee of the jagirdār (in the case of jāgir lands), should usually have been stationed along with his retinue in the sarkār or pargana headquarters. Moreover, serve as he did in an establishment with constant transfers of localities from which revenue was to be collected he did not usually belong to the locality where he was posted; and hence could only be town-based.[1] A part of the cost of collection must, therefore, have been drained out of the countryside.

On the basis of the amounts recommended for survey officials in Todar Mal's memorandum, we may take it that, at a minimum, one-third of the cost of collection was paid in cash-allowances to various employees, quartered mainly in the towns.[2] Most of this amount (perhaps three-fourths) went into subsistence level consumption through wages to servants or expenditure on craft goods. The cost of collection being 1,37,74,20,868 dāms (20% of J'), we may suppose that 91,82,80,579 dāms were absorbed in the countryside, while 75% the remainder, that is 34,43,55,217 dāms went to sustain urban employment.

1. Cf. Charles Eliot, The Chronicles of Oonao, Allahabad, 1862, p.106.

2. Akbarnāma, Vol. III, p.383. Out of an allowance of 24 dāms a day for the survey party, 8 dāms were to be paid in cash to various officials, like amin, the writer, and clerk.

The tābīnān stationed in villages as subassignees (whose number we have assumed to be one-fourth of the total number of the tābīnān) should have received a sum of about 51,92,860 dāms.[1] It will be fair to assume that the consumption pattern of tābīnān holding rural sub-assignments was the same as that of the zamīndārs that is, they too spent at least 10% of their income either on urban manufactures or on hoarding of silver and gold. A half of this amount (2,59,64,643 dāms) under our assumptions, would thus form part of money received for sustenance of urban labour.

With these estimates, it is perhaps possible to work out the ratio of the urban to the rural population. This possibility derives from the assumption that for the mass of the population in towns the physical components of subsistence-consumption were the same as for the mass of population in the countryside. The inference would then be that the total amount paid out in wages in the service and craft sectors should have maintained an equal number of people in the towns and in the transport sector,[2] as would have been maintained in the villages

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1. See Appendix to Chapter XII and section III of the same Chapter.

2. This partially takes care of the difference between urban and rural price-levels owing to costs of transport.

by the same amount of money or value-goods out of the total avlue of agricultural produce.

In order to make statistical use of this formula, we may first estimate the value of the entire agricultural produce retained in the villages and the total amount paid in wages in towns: Since the gross land-revenue realization (J') represented a half of the total agricultural produce, the value of the produce not claimed in revenue too should have amounted to J', or to 6,88,71,04,339 dāms. We assume that the rural expenditure by the zamīndārs, the local potentates and the tābīnān holding subassignments was essentially in the service sector, and on simple rural crafts, corresponding, in the subsistence-lvel consumption it generated, to the amount left with the peasants. The total value of the agricultural produce left in the rural sector could, therefore, be estimated as follows:

Amount left with the peasants:	6,88,71,04,339	dāms
Rural expenditure of the zamīndārs, etc:	1,67,35,66,354	,,
Rural expenditure by tābīnān:	46,73,63,574	,,
Rural expenditure out of payments to revenue staff:	91,82,80,579	,,
Total retained in the rural sector:	9,94,63,14,846	,,

Similarly, the urban wages would add up as follows:

Amount spent on wages out of income of the Mughal ruling class:	1,50,88,54,927 <u>dāms</u>
Urban wages out of the share of the <u>zamīndārs</u> and other rural potentates:	9,29,75,909 ,,
'Labour-share' out of the expenditure of subassignee <u>tābīnān</u>:	2,59,64,643 ,,
'Labour-share' of expenditure out of income of revenue staff:	34,43,55,217 ,,
Total expenditure on maintenance of urban labour:	1,97,21,50,696 ,,

The two figures 1,97,21,50,696 and 9,94,63,14,846 should, under the arguments advanced by us, give us the ratio between the urban population (plus population engaged in country-town transport) and the total population (the sum of the two figures). The ratio 1,97,21,50,696 : 11,91,84,65,549 can be simplified to 16.547 : 100.000.

This suggests that the non-rural population was 16.547% of the total. This includes as we have seen, people dependent upon transport of rural goods to town markets, some of whom such as the grain carriers, cartmen, traders, etc. could have been classed as partly urban and partly rural. For the rural portion of such strata, one may allow a deduction

from the total urban (+ transport) population of around 10%.[1] The 'pure' urban population may, therefore, be put at about 15%.

The size of urban population we have postulated on the basis of our detailed estimates (where some links are undoubtedly arbitrary) appears quite reasonable in the light of our knowledge of the demographic changes in the 19th century. A sample taken from the districts of Eastern India, showed that the fall of urban population in absolute figures was a little over 6% between 1813 and 1872.[2] In 1881 the urban population was 9.3%. If we assume that (a) the population in India as a whole showed the same relative increase as that of the eastern districts in the same period of 1800-1881, and that (b) the urban population in the country as a whole declined in the same ratio as in the eastern districts between 1813 and 1872,[3] the

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1. If the figure of 1.65% of the total population for the <u>rural</u> population engaged in village-town transport appears too small, it may be recalled that this does not include the rural population engaged in transporting rural produce, cattle, etc., for the direct consumption of the ruling class; the size of such direct consumption was not small, amounting according to our estimates, to 46.767% of the total <u>jama</u>'. The numbers engaged in inter-urban commerce is excluded from the size of the urban population postulated here, because we have not counted transport costs among the share of labour-costs in the total value of craft manufactures consumed by the ruling class and its immediate dependents.

2. Irfan Habib, 'A Note on population of India, 1800-1872, cyclostyled.

3. Kingsley Davis, <u>Population of India and Pakistan</u>, p.127.

urban population in 1800 should have been well in excess of 13% of the total.[1] The estimate of 15% of the total population for the size of urban population in 1595-96, does not, therefore, seem to be unreasonably high, particularly since it is quite possible that there had been some urban decline during the course of the 18th century as well.

We can cross-check our calculation by the use of a simple device, viz. by matching the entire expenditure on food and clothing by the urban population, given our estimate of its relative size and of the total population, with the amount from the surplus that was devoted to urban wages. The total population of Akbar's Empire in 1595-96 (excluding Khandesh and Berar) is estimated by us at 9.626 crores (See Chapter XVI). Taking the urban population to be 15% of the total, the urban population in absolute figures should have been 1,44,39,000. In Chapter XV we offer evidence that in the central regions of the Mughal Empire, a family with a size of 4.5 members, spent, for bare subsistence, 342.64 dāms per annum on food and 242.62 dāms on clothing, and that these expenses accounted for 85% of

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1. In this calculation, the total population in 1801 has been taken to be 194,439,000, as suggested by M.D. Morris (IESHR, XI, Nos.2-3, p.311). Dr. Bhattacharya offers a slightly higher estimate, viz. 210 million ('A Guide to Population Estimates of India', cyclostyled); Kingsley Davis offers an estimate of only 125 million. At the latter estimate, the urban population in 1800 would have been as high as 20.4%; but Davis's estimate for the total population has been strongly criticised and may be ignored for our present purpose.

its total income. The total expenditure on food by the urban population at the size estimated by us would come to 1,09,94,17,661 _dāms_, while on clothing it should have been 77,73,31,587 _dāms_. We have already established that in cloth the raw material constituted 32.162% of the value; that is in cloth worth 77,73,31,587 _dāms_, the primary price of raw material would have been 25,00,05,386 _dāms_. Adding this to the amount spent on food (1,09,94,17,661 _dāms_) we can say that the urban population of Akbar's Empire in 1595-96 spent on food and clothing a total sum of 1,34,94,23,047 _dāms_. However, this amount is calculated on the basis of prices prevalent in the Imperial Camp at Agra.[1] Neither the prices nor the wages were uniform all over the Empire. The price level at Agra was certainly higher than that in Bengal and that at Lahore, though it was probably much lower than that of Gujarat. Our estimates of expenditure, therefore, may have a slightly upward bias.

We previously estimated the total apportionment of surplus to urban wages at 1,50,88,54,927 _dāms_. As against this the expenditure on food and raw cotton that we have calculated is 1,34,94,23,047 _dāms_ or 88.82% of the former figure. This is

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1. Vide Chapter XIV.

very close, since on the basis of our data in Chapter XV, we ought to have expected the expenditure on food and cloth to account for 85% of the total wage-income; and we have already explained that some upward bias is to be looked for in our figure for expenses on food and clothing. Indeed the estimates match so closely that, given the rough basis of so much of our calculations, it causes some feeling of embarrassment. Yet at the same time, it does offer an assurance of mutual consistency.

The figures so far worked out by us also provide us with the means of estimating the value added by urban manufactures. We have inferred already that in the case of craft-commodities purchased by the Emperor and the ruling class the value added by labour amounted to a half of the total expenditure on craft-goods, i.e. in absolute figures, 78,46,14,964 dāms. The craft goods did not include cloth consumed by the ordinary towns-people. For that we have to go to the estimate we have made for it above, viz., 77,73,31,587 dāms. Out of this, at 67.838% of the total labour-costs should have claimed 52,73,26,201 dāms. Besides cloth, the towns-people must have purchased at least a few more craft-products, such as pottery, metal utensils and tools. Let us assume, that out of the 15% wage-income left with them they spent about two-thirds on the craft-goods, that is, 15,08,85,492 dāms. If the component of labour cost, here too was one half, the value added would be

7,04,42,746 dāms. The total value added by urban manufacture would then work out at 1,38,23,83,911 dāms. This means that the value added by urban manufactures alone, excluding the value added by trade and transport, etc., was 10.036% of the total agricultural production.

It may here be mentioned that in the entire preceding discussion, it has been assumed that the manufactures of the towns only served the ruling class, the urban population itself, and the export market. From the rural sector only a narrow demand of finer cloth, ornaments, arms and armour has been assumed. It has thus been implied that the rural market for urban goods was confined to demand by superior rural elements alone; and the peasant at least generated no demand for urban produce. This is, of course, a questionable thesis when stated as an absolute negative.[1] The peasants must have obtained their salt, and iron for their plough shares and other agricultural implements, from the towns. Any allowance made for this would raise our estimate of the relative size of the urban population as well as the value added by urban manufacture. But we must set against this possible enhancement, those stages

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1. See Tapan Raychaudhuri's criticism of Irfan Habib's views on the question in Enquiry, N.S. II (1) (1965), pp.92-121; and the latter's reassertion with only a partial qualification, of his earlier thesis in Enquiry, N.S. III (3) (1971), p.27.

of manufacture, e.g. spinning of yarn for town-produced cloth, or smelting of ore for metal goods, which might have taken place partially or wholly outside the towns, but which we have assumed to be wholly urban. If we roughly balance the one by the other, our estimates, in approximate terms, would still stand.

II

REGIONAL LEVELS OF URBANIZATION

The size of the urban population and the magnitude of the value added by urban manufactures that we have computed naturally suggest a comparatively high level of urbanization.

In Chapter Chapter XII, we have argued that 18% of the income of the ruling class went directly towards maintaining unproductive labour; and this partially at least supports the picture of 'camp-cities' popularized from a reading of Bernier,[1] as a specific feature of pre-industrial

1. See, Bernier's description of the mud-walled and thatch-roofed huts of Delhi, "in which lodge the common troops and all that vast multitude of servants and camp-followers who follow the court and the army" (Bernier, Travels, p.246).

urbanization in India. The bulk of the population of such 'camp-cities', given the low wages, could have contributed to demand for little more than bare necessaries. On the other hand, members of the nobility having their seats in the towns had the resources to purchase all kinds of luxuries and so could generate demand sustaining long-distance trade in high-value goods.

A number of towns which subsisted directly on the expenditure of the ruling class might thus have been essentially service-based, dependent upon supplies from surrounding villages while the higher grade craft-products came almost entirely from other centres. Thus inherent in the existence of these 'camp-cities' was the existence of stable manufacturing centres, to meet the demand the 'camp-cities' generated for supplies of manufactures. Such manufacturing centres could, theoretically, existed even if no jāgīrdār established his household and quartered his retainers and attendants there. Many towns, of course, might well partake of a dual nature - being both encampments and manufacturing centres; but our argument, in the main, is that even if there were cities created wholly by military and service-establishments, these had to be supplied by manufactured products from other towns, which were, therefore, firmly based upon craft production for distant markets.

Inherent in this hypothesis is the possibility that the degree of urbanization need not necessarily have corresponded with the actual concentrations of members of the ruling class. Regions where they resided in fewer numbers, might still contain large towns sustained by the markets provided by aristocratic demand emanating from towns or encampments in other regions. Thus to study the degree of urbanization we need to do more than recite the names of capital cities. Unfortunately, except for fleeting statements, no detailed descriptions are available for late 16th century towns, to help us trace even a fragmentary pattern of urbanization in geographical terms.

In the absence of any straight forward demographic data, the only way the sizes of various towns and regional levels of urbanization can be even remotely guessed at is by recourse to a device, which lets us have estimates of taxation obtained from various towns. The means by which the size of urban taxation is sought to be established is based on the simple assumption that since the jamaʿ recorded in the Āʾīn included urban taxes as well, the jamá/ārāzī ratio for the mahal comprising a large town should be higher than the J/A for the adjoining 'rural' parganas. If we further assume that generally the parganas comprising towns contributed their share

of land revenue according to the recorded *ārāzī*, the component of land-revenue in the *jama'* of these *parganas* can be worked out by multiplying the *ārāzī* by the J/A calculated for the remaining *parganas* in the *sarkār* or the *dastūr*-circle (as the case might be). On subtracting the result, representing the estimated land-revenue, from the *jama'* of the urban *pargana* we should get the total amount of realization expected from taxes collected in the town situated within the *pargana*.

Underlying this device is the supposition that the degree of the efficiency of measurement was uniform in the whole of a *sarkār* or *dastūr*-circle. If this was not the case, if, let us say, the ratio of the area measured to the relative revenue-paying area in the adjoining area was lower than in the urban *parganas*, the non-agricultural taxation in the urban *pargana* would be correspondingly understated. In most cases, the assumption of a uniformity in the ratio of the measured area to the total revenue paying area in the two kinds of *parganas* is not unreasonable, especially where measurement had reached high levels in the *sarkār* or region as a whole. But it would not hold good for urban *parganas*, particularly the *sarkār* headquarters, in those tracts where measurement was still in progress. In such localities there might be a strong possibility for the *ārāzī* to have been more fully measured in

the *pargana* of the *sarkār* and *sūba*-headquarters than in the other *parganas*. Where such was the case, measurement being incomplete in most of the *parganas*, the J/A for the 'rural'-*parganas* would have been high. This high J/A, when multiplied with the *ārāzī* of the *pargana* constituting the *sarkār* headquarters, where the measurement covered the entire cultivation, would certainly yield an inflated figure for the component of land-revenue in the *jamaʿ* and this would ultimately reduce the size of urban taxes in total *jamaʿ* of the *pargana*.

The device we have suggested can, in any case, be used only for those regions where measurement had been undertaken and the *ārāzī* figures are recorded. A number of places which are described in literary sources as towns, manufacturing centres, ports, ferry points, junctions on important routes, etc., have been first selected;[1] these are listed in Appendix I to this Chapter. The *parganas* which contain them have then been tested to show whether the J/A there is higher than the J/A of the adjoining *parganas*; and, is so, what is the absolute amount of difference that can be ascribed to urban taxation.

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1. Individual towns are discussed and listed under various heads in Hamida Khatoon Naqvi's *Urbanisation and Urban-Centres under the Great Mughals, 1556-1707*, Simla, 1972.

   This may be consulted to check my own list, which has, however, been made independently, from the sources.

For most of the parganas selected by us the J/A of the urban parganas is distinctly higher than the J/A of the adjoining parganas, so that the size of urban taxation can be calculated. Taking all such cases, I have calculated 'urban-tax indices', taking the hypothetical urban tax for Agra as 100. The figures are set out in Table I.

However, in the case of certain towns (mainly sarkār headquarters) the J/A in the rural parganas exceeds the J/A of the urban. These are listed in Appendix II: it will be seen that their number is much smaller than those in Appendix I (being 27 to 73). Almost all the places are sarkār-headquarters belonging to regions where measurement was incomplete, being mainly situated in sūbas Allahabad, Malwa and Bihar, and parts of sūbas of Agra and Awadh.[1] As illustration, we may take the pargana of Allahabad, for which we obtain a negative result. Here we find that the ārāzī recorded under this single pargana amounted to over 49% of the total ārāzī of sarkār Allahabad. It is obvious that measurement in the pargana of the sarkār-headquarters was practically complete, while in all the other parganas it was in the process of being initiated. Moreover, it will be noticed that not only is Appendix II over-burdened with places which were only sarkār-headquarters but

1. Vide infra Chapter II.

we have also no other information suggesting that most of them were towns at all. Quite possibly some of them were simply glorified villages or forts from which little was collected by way of non-agricultural taxation.

The urban taxation estimated by us (in the far more numerous cases of positive results) can serve as a very rough index of urbanization. Since, unlike land-revenue, no fixed rates of urban tax to the total product can be propounded, the size of urban tax is, of course, no accurate indicator of the volume of urban commerce or value added by urban manufactures. Yet it can still indicate the capacity to bear tax and, therefore, can provide us with some clue as to the level of urbanization and urban income.

TABLE I

Size of Urban Tax, taken as equal to excess of <u>jama'</u> over estimated Land-revenue based on J/A.

Pargana Suba AGRA	Urban-tax (dām)	Index (Agra=100)
1. Agra bā haveli	3,18,24,093	100.000
2. Bayana	36,43,456	11.449
3. Chanwar	54,39,987	17.094
4. Dholpur	55,47,650	17.432
5. Fatehpur Sikri	53,91,305	16.941
6. Mathura	6,05,910	1.904
7. Hindaun	19,05,258	5.987
8. Qanauj bā haveli	88,789	0.279
9. Gavalior bā haveli	75,32,255	23.668
10. Narwar	12,44,602	3.911

11. Alwar	10,08,004	3.167
12. Bairata	67,24,859	21.131
13. Tijara	5,42,225	0.170
14. Narnaul bā havelī	22,43,294	7.049
15. Singhana	1,18,81,629	37.335
Sūba ALLAHABAD		
16. Hadiabas	5,14,902	1.618
17. Manikpur bā havelī	2,02,866	0.637
18. Jais	1,34,928	0.424
19. Chunar bā havelī	1,42,918	0.449
20. Mahoba	2,63,423	0.828
21. Kora bā havelī	6,45,969	2.030
22. Kara bā havelī	11,17,732	3.512
Sūba AWADH		
23. Awadh ba havelī	14,67,507	4.611
24. Chhitapur	2,97,850	0.936
Sūba DELHI		
25. Delhi	[illegible]	11.757
26. Bareilly	89,40,902	28.095
27. Sambhal	95,468	0.300
28. Amroha	11,21,112	3.523
29. Saharanpur	20,24,253	6.361
30. Rewari	28,43,075	8.934
31. Hardwar (pargana Bhogpur)	44,275	0.139
32. Hissar Firuza	11,24,659	3.534
33. Thanesar	3,18,332	1.000
Sūba LAHORE		
34. Lahore	32,64,848	10.259
35. Kalanaur	2,55,007	0.801
36. Sultanpur	3,52,248	1.107
37. Sialkot	22,27,185	6.998
38. Gujarat	14,49,838	4.556
39. Attock Benaras	30,54,724	9.599
40. Ruhtas bā havelī	27,58,363	8.668
41. Khushab	7,12,918	2.240
42. Dhangot	2,43,016	0.764
43. Shamsabad	63,63,085	19.995
44. Makhiala	1,30,285	0.409
45. Nilab	2,42,100	0.761

Sūba MULTAN

46.	Balda Multan	15,56,196	4.890

Sūba GUJARAT

47.	Ahmadabad	31,13,02,645	98.361
48.	Bandar Ghogha	6,00,000*	1.855
49.	Khambayat	1,73,27,855	54.449
50.	Patan bā havelī	52,15,679	7.692
51.	Nadant bā havelī	24,48,001	31.976
52.	Baroda	1,01,76,136	31.976
53.	Bhroach bá havelī	67,26,039	21.135
54.	Gandhar	2,40,000	0.754
55.	Hansot	13,36,875	4.201
56.	Bulsar	5,19,235	1.632
57.	Rander	7,339	0.023
58.	Surat bā havelī	50,12,465	15.751
59.	Navsarī	1,20,667	0.379

Sūba AJMER

60.	Amber	22,50,435	7.071
61.	Sambham	89,75,176	28.202
62.	Ranthambor	1,51,649	
63.	Bundi	11,61,251	3.649
64.	Udaipur	11,20,000*	3.519

Sūba MALWA

65.	Ujjain bā havelī	7,21,863	2.268
66.	Sironj	10,47,051	1.084
67.	Mandu	23,254	0.073
68.	Jalalabad bā havelī	17,687	0.056
69.	Handia	1,45,117	0.456
70.	Nadurbar	8,98,640	2.824
71.	Dhar	2,60,585	0.819

Sūba BIHAR

72.	Patna	2,07,160	0.651

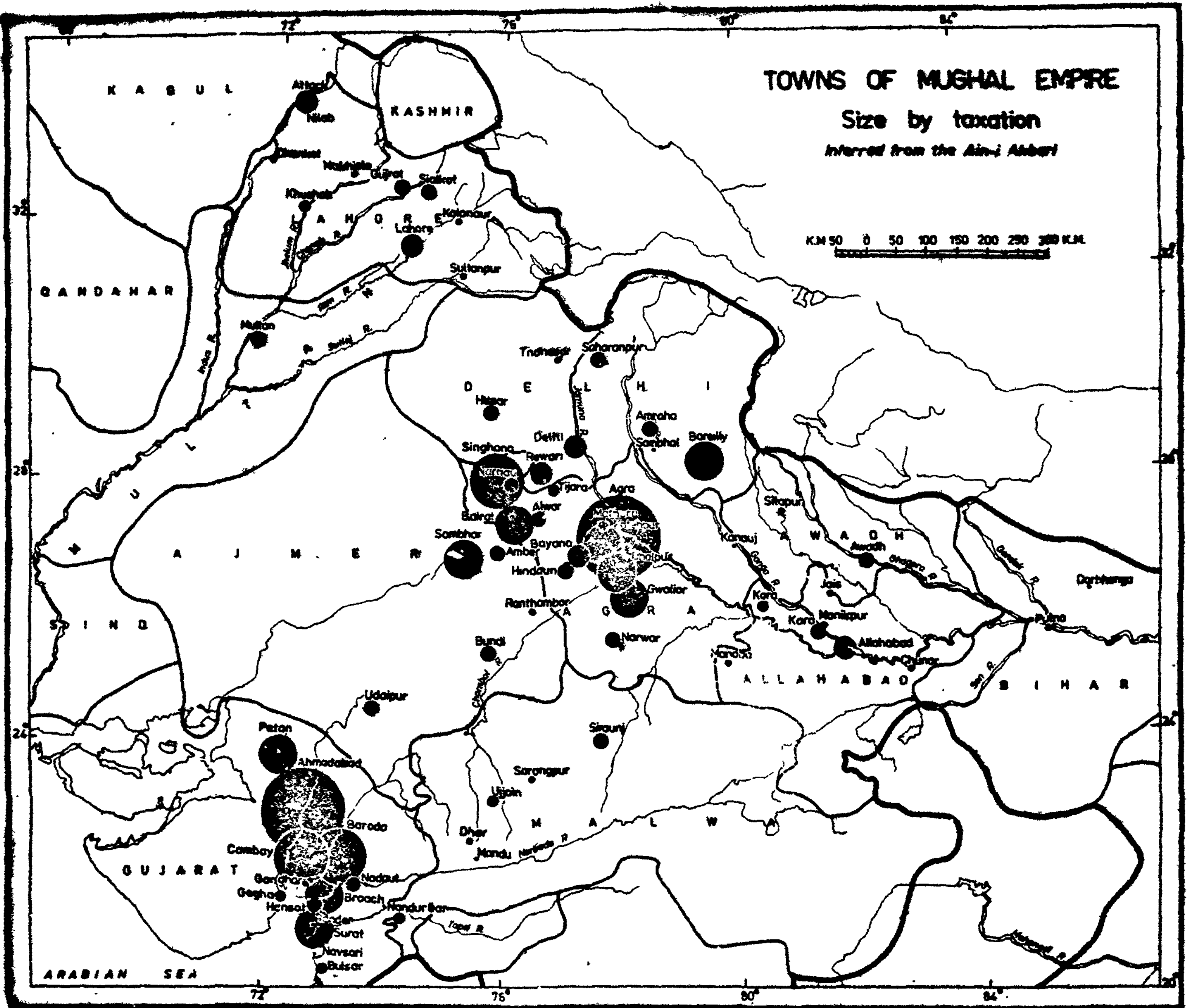
For convenience of a visual grasp of the geographical pattern indicated by the table, the results are put on the accompanying map of Akbar's Empire.

It can be seen from Table I that Agra was indisputably, the largest city in the Empire, and the level of urbanization in the *sūba* of Agra was fairly high. Quite a few places (in all 15) appear to have been flourishing towns: Some like Fatehpur Sikri, Bayana, Alwar, Gawalior were manufacturing centres; while others were commercial centres as they lay on trade routes, e.g. Chanwar and Dholpur.

The city of Ahmadabad accounted for the second largest amount of tax of any urban centre. Some other towns in Gujarat also appear to have been of a large size; moreover, the number of towns (13 in all) in Gujarat is the largest for any *sūba* except Agra. The other *sūba* where the number of urban centres turn out to be large is Lahore (with 12 towns). Some of these (like, Shamsabad, Dhangot and Makhiala) might have contributed large amounts of tax owing to the manufacture and trade in salt.[1] Yet quite surprisingly Lahore has a very

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1. According to Abūl Faẓl the merchants who bought salt at 2 *dāms* a *man* paid 40 *dāms* for every 17 *mans* to the State (*Āīn*, I, p.539); that is, the State duty was 17.65% of the prime-cost.


TOWNS OF MUGHAL EMPIRE
Size by taxation
Inferred from the Ain-i Akbari
K.M 50 0 50 100 150 200 250 300 K.M.
KABUL
KASHMIR
GANDAHAR
LAHORE
DELHI
AJMER
AGRA
AWADH
ALLAHABAD
BIHAR
MALWA
GUJARAT
SIND
ARABIAN SEA
Attock
Nilab
Gujrat
Sialkot
Kalanaur
Lahore
Sultanpur
Multan
Saharanpur
Hissar
Amroha
Sambhal
Bareilly
Delhi
Singhana
Rewari
Tijara
Agra
Alwar
Bairat
Sambhar
Bayana
Amber
Hindaun
Gwalior
Ranthambor
Kanauj
Sitapur
Awadh
Jais
Kara
Manikpur
Allahabad
Chunar
Patna
Darbhanga
Narwar
Bundi
Udaipur
Patan
Ahmadabad
Sironj
Sarangpur
Ujjain
Dhar
Mandu
Baroda
Cambay
Nadaut
Broach
Ghogha
Surat
Navsari
Bulsar
Nandurbar
Indus R.
Jamuna R.
Ganga R.
Narbada R.
Tapti R.
72°
76°
80°
84°
32°
28°
24°
20°

Ch XIII

Map I

modest size of urban taxation to offer; and this appears to be quite in contradiction to what Abul Fazl's testimony[1] and the travellers' descriptions[2] would lead us to expect about the size of Lahore as a city. Certainly one would have expected it to be larger than Agra, and very much bigger than Delhi at that time.[3]

In the sūbas of Allahabad and Malwa, though the number of towns was not very small, the size of tax realized from the individual centres was, on an average, small, when compared to those of sūba Agra. The other sūbas (Awadh, Bihar, Multan and Ajmer) seem to have had only small numbers of towns that yielded a significant size of taxation. In these regions, however, the lower extents of measurement in the rural parganas might also partly be responsible for lower figures of taxation for the towns.

There might be a possible objection to this estimation of the relative size of towns from the absolute figures deduced from urban taxation, on the ground that urban taxation might

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1. Āʾīn, I, p.538.

2. Monserrate, pp.159-60; Coryat in Early Travels, p.243 (he visited Lahore in 1615).

3. Cf.Moreland, India at the death of Akbar, p.12.

have varied not only according to the varying kinds and rates of taxes, but also according to differences in price-levels. One might argue, for example, that in Gujarat we have high figures because of high prices; and that, conversely, low prices are responsible for the smaller size of urban taxation in Bihar. However, higher prices should also have generated a higher *jama'* per unit of gross cultivation. If so, we can perhaps correct any deviation on account of difference in price-levels, simply by calculating the J/GC for the Agra circle and then adjusting the *jama'* and urban-tax for each urban centre for the incidence of *jama'* per unit of cultivation in the Agra circle. We have here to take the gross cropped area and not the *ārāzī*, since as stressed elsewhere the extent of measurement (relative to the total revenue-paying area) was not uniform in the different regions.[1] Even if it was uniform in the whole of a *sarkār*, the calculations on the basis of the *ārāzī* might involve a risk of over-estimation if the measurement was incomplete and of under-estimation if the size of current fallows and uncultivable waste, included in the *ārāzī*, was large, in comparison with the position in the Agra dastur-circle. Our calculations are made by the following simple

1. Vide Chapter V.

formula:

Urban Tax of town x (as in Table I)	T_x
Incidence of the *jama'* per unit of gross cultivation of *pargana* containing the town x	R_x
Incidence of the *jama'* per unit of gross cultivation for Agra	R_a
The adjusted Urban Tax of town x is	$\frac{T_x R_a}{R_x}$

Table II shows the adjusted figures, by taking account of G.C. It is possible to attempt this exercise only for those areas for which the gross cultivation in 1595-96 has been estimated by us (Chapter II).

Table II

Size of Urban Tax, adjusted to differences in price-levels as deduced from variations in J/GC with Agra as standard.

	Urban Tax (in *dāms*)	Index (Agra=100)
1. Agra *bā havelī*	3,18,24,093	100.000
2. Qanauj *bā havelī*	68,299	0.214
3. Chunar *bā havelī*	1,04,043	0.323
4. Kora *bā havelī*	4,76,364	1.497
5. Kara *bā havelī*	7,69,750	2.419
6. Awadh *bā havelī*	13,62,316	4.281
7. Chittapur	1,63,849	0.515
8. Bareilly	81,87,191	25.726
9. Lahore	11,53,840	3.625
10. Kalanaur	90,122	0.283

11. Sultanpur	1,49,035	0.468
12. Siyalkot	9,08,522	2.855
13. Gujarat	5,02,426	1.579
14. Attock Benaras	17,92,468	5.632
15. Haveli Ruhtas	16,18,567	5.086
16. Khusab	4,18,330	1.315
17. Dhankgot	1,42,593	0.448
18. Shamsabad	37,33,766	11.733
19. Hakkiala	76,449	0.240
20. Nilab	1,42,061	0.446
21. Ahmadabad bā havelī	2,24,60,572	70.577
22. Bandar Ghogha	4,30,518	1.353
23. Khambayat	1,24,33,247	39.069
24. Patan bā havelī	38,78,509	12.187
25. Nadant bā havelī	29,14,127	9.157
26. Baroda bā havelī	40,55,241	12.743
27. Gandhar	2,90,960	0.914
28. Bharoach bā havelī	81,54,196	25.623
29. Hansot	16,20,737	5.098
30. Bulsar	6,74,866	2.121
31. Rander	9,539	0.030
32. Surat bā havelī	65,14,855	20.471
33. Nasari	1,56,835	0.493

It will be seen at once that the relative positions remain broadly the same though the magnitude of urban-tax changes in numerical terms. The city of Ahmadabad, with the size of its urban tax greatly reduced, still occupies the second place. In the case of some other towns of Gujarat (Surat, Bhroach and Navasari) the size of urban tax is even larger than in Table I. Only in the case of the ṣūba of Lahore is there a reduction in the size of tax from every town.

From a consideration of the relative size of tax obtained from individual towns, we may pass on to consider the level of urbanization in each ṣūba, on the basis of the urban-

tax figures that we have worked out. This can be done through following a simple method. We may total up the figures of the hypothetical taxation for the towns situated within each _suba_ and compare the total urban taxation of the _suba_ with its total _Jama'_. The figures used for urban taxation are drawn from Table I, since we are here not attempting inter-regional comparisons, for which alone figures of Table II would have been necessary.

Table III

Total of Urban Tax (based on Table I) as % of _Jama'_

Subas	(a) Urban Tax (_dams_)	(b) _Jama'_ (_dams_)	(a) as % of (b)
Bihar	2,07,160	22,19,10,059	0.093
Allahabad	41,40,470	22,26,64,343	1.947
Awadh	17,65,357	20,13,99,937	0.877
Agra	8,56,23,316	54,49,69,548	15.712
Malwa	34,59,508	24,00,38,159	1.440
Gujarat	14,48,79,347	44,65,38,628	32.445
Ajmer	1,36,58,511	28,42,45,025	4.805
Delhi	2,02,53,570	60,06,87,797	3.372
Lahore	2,10,53,613	56,65,60,144	3.716
Multan	15,56,196	15,62,53,243	0.996
	29,65,97,048	3,49,58,68,931	8.484

The ratios of urban taxation to the total *jama'*, as set out in Table III above, shows Gujarat, again, to have been the most urbanised region. Here urban taxation is strikingly high, at 32.445% of the *jama'*. In Agra, the urban tax is high enough, at 15.7% of the total *jama'*, but is still far below the ratio achieved in Gujarat. In the other *subas* the ratio does not even reach 5%; rather surprisingly though, this per centage is nearly achieved in *ṣūba* Ajmer.

It is remarkable that by and large, the ratios of urban tax to the *jama'* revealed by Table III should conform to the situation existing in recent times. A glance at the map of urban population based on the 1961 Censuses of India and Pakistan,[1] shows Gujarat as the most highly urbanized region within the areas covered by our statistics; the territories corresponding to subas Bihar, Allahabad and Awadh appear in the 1961 Map as the least urbanised as well. Rajasthan, like the Mughal *ṣūba* of Ajmer, shows a relatively higher degree of urbanization. The main difference is seen in the position of the districts forming the Mughal *ṣūba* of Agra; these no longer appear as highly urbanized, whereas the districts of central Panjab show a higher level of urbanization.

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1. See Fig. 4.2 (Map) in O.H.K. Spate and A.T.A. Learmouth, *India and Pakistan*, 3rd edition, 1967, p.126.

A final note about the total size of urban taxation in the Empire as a whole: At 8.485% of the *jama*ʿ, it remains within the ceiling of 10% we have allowed for non-agricultural taxation within the *jama*ʿ of the Mughal Empire in order to calculate the estimated gross-revenue realization (J') from the Empire. To this extent, these figures supply a welcome corroboration of an inference drawn from other evidence.

Appendix I

Note: Sources are given for most descriptions, unless the facts are too well established to need substantiation. Mints are listed in the Āīn, I, p. 27. References to later mints are derived from coin catalogues.

Sūba AGRA

1. Agra bā havelī	The Capital of the Empire; major commercial centre; Mint (Āīn, I, 27)
2. Bayana	High quality indigo produced and manufactured; Centre of indigo trade (Āīn, I, 422, Finch, 151-2, Pelsaert, 13).
3. Chanwar	Ferry point on the main route from Agra to Allahabad.
4. Dholpur	On the route from Agra to Burhanpur, commanding the Chambal ferry.
5. Fatehpur Sikri	Well-known capital of Akbar. Producing woollen carpets (Āīn, I, p.50; Pelsaert, 9, Thevenot, 56); red sand stone quarries (Āīn, I, 422, Finch, 151-2); Mint.
6. Mathura	Pilgrim centre, on the Agra-Delhi route.
7. Hindaun	Production centre for indigo (Pelsaert, 14).
8. Qanauj ba haveli	Sarkār headquarters; Copper mint.
9. Gawalior ba haveli	Sarkār headquarters; produced jasmine oil (Mundy, II, 62-3); Copper mint (Āīn, I, 27).
10. Narwar	Sarkār-headquarters.
11. Alwar	Sarkār headquarters, woollen carpets, glass (Āīn, I, 422-5), Saltpetre (Āīn, I, 45); Copper mint (Āīn, I, 27).
12. Bairat	Copper mines (Āīn, I, 422).

13. Tijara bā havelī	Sarkār-headquarters.
14. Narnaul bā havelī	Sarkār-headquarters; later, mint.
15. Singhana	Copper mines (Āīn, I, 442, 454); Copper mint.
Sūba ALLAHABAD	
16. Hadiabas	Ferry point facing Allahabad across the Jamuna.
17. Manikpur bā havelī	Sarkār headquarters.
18. Jais	Well-known town.
19. Chunar bā havelī	Sarkār headquarters, Pottery (Mundy, II, p.114).
20. Mahoba	Famous for its betel leaf (Āīn, I, 424).
21. Kora bā havelī	Sarkār headquarters, on the Agra-Allahabad route (Finch, 178-9).
22. Kara bā havelī	Sarkār headquarters, on the Agra-Allahabad route (Finch, 178-9).
Sūba AWADH	
23. Awadh bā havelī	Sūba capital, sarkār headquarters, Manufacture of horn utensils (Finch, 176); Coarse cloth (Pelsaert, 7). On the Agra-Jaunpur route; Copper mint (Āīn, I, p.27).
24. Chhitapur	Chintz (Thevenot, I, 57).
Sūba DELHI	
25. Delhi	Sūba capital, sarkār headquarters; Chintz; Mint (Āīn, I, 27).
26. Bareilly	On the Delhi-Patna route, later, mint.
27. Sambhal	sarkār headquarters; on the alternative Delhi-Patna route; Copper mint (Āīn, I, 27

28. Amroha	On the Delhi-Patna route.
29. Saharanpur	Sarkār headquarters; Copper mint (Āīn, I, p.27).
30. Rewari	Sarkār headquarters; on the Delhi-Ajmer route.
31. Hardwar (pargana Bhogpur)	Pilgrim-centre; copper mint (Āīn, I, 27).
32. Hissar Firuza	Sarkār headquarters; Copper mint (Āīn, I, p.27).
33. Thanesar	Sal-ammonia (Pelsaert, 46, Purchas, IV, p.49); Woven fabrics (Haft-Iqlīm, II, 461).
Sūba LAHORE	
34. Lahore	Second capital of the Empire; cloth (Āīn, I, 106). Shawls (Āīn, I, 104); Ship-building (Āīn, I, 202); Cloth (Pelsaert, 31); Mint (Āīn, I, 27).
35. Kalanaur	Copper-mint (Āīn, I, 27).
36. Sultanpur	Chintz & quilts (Purchas, IV, 267-8).
37. Sialkot	Sarkār-headquarters; Manufacture of muslin, paper, quilts, daggers, spears (Sujan Rai, 72); Copper mint (Āīn, I, 27).
38. Gujrat	Gypsum plates, etc. (Āīn, I, 539).
39. Attock Benaras	Ferry point (Āīn, I, 590); Copper mint (Āīn, I, 27).
40. Ruhtas bā havelī	Sarkār headquarters; on the Lahore-Kabul route.
41. Khushab	Well-known town on the Jhelam (Sujan Rai,
42. Dhankot	Salt mines (Āīn, I, 548).
43. Shamsabad	Salt mines (Āīn, I, 548).
44. Makhiala	Salt mines (Āīn, I, 548).
45. Nilab	Ferry point (Āīn, I, 590).

Sūba MULTAN

46. Balda Multan	Sūba headquarters, a big mart on the Qandhar-Multan route; Mint (Āīn, I, 27).

Sūba GUJARAT

47. Ahmadabad	Sūba capital; Sarkār-headquarters. Known for its Velvet (Āīn, I, 486, Pelsaert, 19, Purchas, IV, 167); gold and silver embroidery; inlay work (Āīn, I, 485, Finch, 173); Carvings (Āīn, 425, Finch, 173); Mint (Āīn, I, p.27).
48. Bandar Ghogha	Major port (Āīn, I, 486); Ship-building (English Factories in India, 1634-36, p.95).
49. Khambayat	Port (Āīn, I, 486); ivory-carvings; cornelian & agate carving (Thevenot, 18); Muslin and quilts (Careri, 164).
50. Pattan bā havelī	Sarkār headquarters; textile (Āīn, I,487); Copper Mint (Āīn, I, 27).
51. Nadant bā havelī	Sarkār-headquarters.
52. Baroda	Sarkār-headquarters, cotton stuffs (Pelsaert, 43).
53. Bhroach bā havelī	Sarkār-headquarters; Agate and Cornelian (Finch, 174); Chintz (Pelsaert, 43).
54. Gandhar	Port (Āīn, I, 488).
55. Hansot	Port (Āīn, I, 488).
56. Bulsar	Port (Āīn, I, 488); cotton and silk-stuffs (Abbe Carre, III, 767).
57. Rander	Port (Āīn, I, 488); Baftas (Pelsaert, 41).
58. Surat bā havelī	Sarkār-headquarters; Port (Āīn, I, 48, Pelsaert, 38-9); Ship-building (Fryer, I, 299, 306); Cotton and silk stuffs (Tavernier, II, 3); Mint (Āīn, I, 27).

59. Navsari	Ship-building, scented oil (Āīn, I, 488); Baftas (Finch, 134).

Sūba AJMER

60. Amber	Sarkār-headquarters, silk stuffs (Āīn, I, 106).
61. Sambhar	Salt (Āīn, I, 512; Br. Mus. Add. 6552).
62. Ranthambor	Sarkār-headquarters; Copper mint (Āīn, I, 27).
63. Bundi	Chief seat of the Hara pīincipality.
64. Udaipur	Newly built capital of Mewar.

Sūba MALWA

65. Ujjain bā havelī	Sūba capital; mint (Āīn, I, 27).
66. Sironj	Muslin (Āīn, I, 461); Chintz (Mundy, II, 56); betel-leaf (Finch, 143); Copper mint.
67. Mandu	Sarkār-headquarters; on the Burhanpur-Agra route; Copper mint (Āīn, I, 27).
68. Jalalabad ba haveli	Sarkār-headquarters.
69. Handia	Sarkār-headquarters; on the Burhanpur-Agra route (Finch, 139-43).
70. Nadurbar	Sarkār-headquarters.
71. Dhar	Known for its grapes (Āīn, I, 456).

Suba BIHAR

72. Patna	Sūba capital; coarse muslin; Shields (Pelsaert, 8); Mint (Āīn, I, p.27).

Appendix II

The 'urban'-parganas where the calculated land-revenue exceeds the *jama'*.

1.	Bihar *bā havelī*	*Sarkār* headquarters; Paper manufacture, (*Āin*, I, 417).
2.	Hajipur	*Sarkār*-headquarters.
3.	Rohtas	*Sarkār* headquarters.
4.	Allahabad	*Sūba* and *Sarkār* capital; Mint (*Āin*, I, 27).
5.	Ghazipur	*Sarkār*-headquarters, on Allahabad-Patna route.
6.	Benaras	*Sarkār*-headquarters, copper mint (*Āin*, I, p.27); Muslin (*Āin*, I, p.423).
7.	Kalinjar	*Sarkār*-headquarters.
8.	Gorakhpur	*Sarkār*-headquarters; copper mint (*Āin*, I, p.27).
9.	Bahraich	*Sarkār*-headquarters.
10.	Khairabad	*Sarkār*-headquarters.
11.	Lucknow	*Sarkār*-headquarters; Copper mint (*Āin*, I, p.27).
12.	Kol	*Sarkār*-headquarters; Indigo (Finch, *Early Travels*, p.179; Pelsaert, p.15).
13.	Erach	*Sarkār* headquarters.
14.	Payanwan	*Sarkār* headquarters.
15.	Mandlaer	*Sarkār* headquarters.
16.	Sahar	*Sarkār* headquarters.

17. Raisen	*Sarkār* headquarters.
18. Chanderi	*Sarkār* headquarters.
19. Kotri Pisawa	*Sarkār* headquarters.
20. Champaner	*Sarkār* headquarters.
21. Godhra	*Sarkār* headquarters.
22. Ajmer	*Sūba* capital; Copper mint (*Āīn*, I, 27).
23. Chittor	*Sarkār* headquarters.
24. Badaun	*Sarkār* headquarters; copper mint (*Āīn*, I, p.27).
25. Sirhind	*Sarkār* headquarters; Copper mint (*Āīn*, I, p.27).
26. Uchh	*Sarkār* headquarters.

Chapter XIV

PRICES AND WAGES

I

Information on two important subjects - prices and wages - is available in profusion in the Āīn. The data it provides have been studied by V.A. Smith, Moreland, Mukerji and Desai, with a view mainly to determining the purchasing power of money and wages at that time.[1]

Abul Fazl has a chapter exclusively devoted to listing prices of agricultural and pastoral products, viz. foodgrains, vegetables, meat and fowl, spices, pickles, etc. Price of fruits, dry and fresh, perfumes, varieties of silken, cotton and woollen cloth, and building materials, also claim a chapter each. The prices of chemicals, metals, iron-pegs, horse-shoes and a number of other commodities are found scattered in other chapters.

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1. V.A. Smith, Akbar the Great Mogul, Delhi, 1958, pp.281-6; W.H. Moreland, 'Prices and Wages under Akbar', JRAS, 1917, pp.815-25, and 'The Value of Money at the Court of Akbar', JRAS, 1918, pp.375-85; R. Mukerjee, 'The Economic History of India , 1600-1800', JUPHS, 1941, pp.41-96; A.V. Desai, 'Population and Standard of Living in Akbar's Time', IESHR, 1972, pp.43-62, and 'Population & Standard of Living in Akbar's Time - A Second Look', IESHR, Vol. XV, No.1, 1978.

For making use of these quotations we should be sure about their nature. One needs to ask, first of all, whether these denoted retail or whole-sale prices, and what place or places these were current at.

The short introductory passage in the 'Āīn of Provisions' (Āīn-i Nirkh-i Ajnās) says that these are "the more or less normal (miyāna) prices, though on the march and in the rains, the prices vary substantially."[1] One can legitimately infer from this statement that the prices that Abūl Fazl quotes are those prevalent at the Imperial Camp, when not on the march and for seasons other than the rainy season. These are then likely to be retail prices, probably well above the prices (in case of food-grains, at least) that prevailed in the adjoining rural districts.

While Smith and Mukerjee have accordingly taken the Āīn prices to be retail, Moreland has argued that these are whole-sale prices, being those at which provisions were acquired for the Imperial kitchen, from various places.[2] In other words, the prices were really not those prevalent at

1. Āīn, I, p.60.

2. W.H. Moreland, 'Prices & Wages', op. cit., p.816.

the camp at all. But should one accept this view, one would find it hard to explain, then, why Abul Fazl should have said that the prices altered when the camp was on the move. Prices paid at distant markets would not surely have been affected by marches of the Imperial camp.[1]

One further argument that Moreland puts forward to support his view is that the unit of weight in which the prices are expressed, is normally the man, suggestive, in his view, of large transactions. But, the man used here only equals 55.32 lbs. avdp. and has nothing to do with the British 'maund' of 82.28 lbs avdp. It is, therefore, by no means such a large unit of weight as to have been out of place in retail transactions. And even in Morelands' own time retail prices of food grains were quoted for 'maunds' and not in seers (unless it be so many seers per Rupee). Moreover, for certain commodities the Āin quotes prices per ser; such as for ginger (2½ dāms/ser), and sugar of superior quality (nabāt, and qand-i safaid). Convenience of statement too must have dictated the use of mans and not sers for quoting prices. Rupees or dāms could have been rounded off more easily when being quoted for mans, than would have been possible, had the quotations been per ser.

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1. Cf. Irfan Habib, Agrarian System, p.82 n.

That these prices could not have been either wholesale or those prevailing at the markets of origin, is shown incidentally by the prices of grapes. Abul Fazl says that the Kashmir grapes sold at 8 sers/dām (i.e. 5 dāms/man) in Kashmir and the cost of transporting them (from there to the Imperial Camp) was Rs.2/man (80 dāms/man).[1] If then the Āīn was giving prices paid at places of origin, it should have given a price of 5 dāms per man for grapes in its list of prices of fruits, i.e. 8 sers/dām only. Were its price for grapes that of retail at the Imperial Camp, it should have exceeded 85 dāms/man (the Kashmir price plus cost of transport). We actually find that the price given in the Āīn's list is 108 dāms/man,[2] thus clearly covering prices of grapes in the primary market, the cost of transport and merchants' (and retailers') profits.

Another small point to consider is that according to Abul Fazl the Imperial kitchen was provided with fresh vegetables from the 'kitchen garden';[3] these therefore were

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1. Āīn, I, p.67.
2. Ibid., p.68.
3. Ibid., p.54.

not probably purchased from the market by the palace officials. But Abul Fazl's price list contains prices for all kinds of vegetables.

If then the prices are the retail prices prevailing at the Imperial Camp, these should relate either to Agra or to Lahore. Agra (and the neighbouring city of Fatehpur Sikri) was the seat of Akbar's court until 1586,[1] when Akbar left it for Lahore. The latter city remained the Capital till 1598.[2] Now it seems that much of the material collected in the Āīn-i Akbarī dates from a period before 1586, while the editing has been done mainly when the court was at Lahore.[3] Though Abul Fazl does not mention, which place his prices refer to, he holds them to represent the normal level during a long period. While there is no explicit evidence to suggest that the prices are those of Agra, it is, at least certain that these were not the normal prices at Lahore. Abul Fazl tells us in the Akbarnāma, that as a result of the arrival of the court at Lahore, the prices there rose so substantially that Akbar promulgated a 20%

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1. Akbarnāma, III, p.494.
2. Ibid., p.748.
3. See Chapter I.

increase in the land-revenue in the province.[1] This suggests that the normal Lahore prices were well below the normal Camp prices.[2] On the other hand, no remission in land-revenue apparently occurred at Agra when Akbar left it in 1586.[3] Had such a remission been made, it would surely have been recorded, as a notable piece of generosity. Indeed, the Akbarnāma, records the remission in land-revenue, granted in three other sūbas (Allahabad, Awadh and Delhi) in the very same year (1586) and this specifically on account of a substantial fall in prices.[4] Neither was any revision promulgated when Akbar returned to Agra in 1598,[5] so that one may assume that the level of agricultural prices at Agra was considered to be at par with that of the Imperial Camp. This does not seem improbable, since Agra was one of the biggest commercial centres of the Mughal Empire.

There are some other facts which indicate that at least the agricultural prices in the Āīn are more likely to

1. Akbarnāma, III, p.747.
2. Cf. Irfan Habib, Agrarian System, p.82.
3. Akbarnāma, III, p.765.
4. Ibid., p.494.
5. Ibid., p.748.

be those of Agra. A comparison of the pattern of relative supply of foodgrains, as reflected in their prices, relative to wheat, given in the Āīn, with those at Agra, in the decade just previous to the firm establishment of the railway network in the region and in 1894,[1] after the railways, offers us an opportunity of testing whether the Āīn's relative prices are closer to those of Agra or Lahore.

Table I

	Āīn	Agra		Lahore	
		1861-70	1894	1861-70	1894
Wheat	100	100	100	100	100
Barley	66.67	63.54	60.66	64.24	59.03
Juar	83.33	73.41	60.24	81.23	75.90
Gram	66.67	78.98	62.30	72.42	68.07
Bajra	66.67	76.48	77.46	90.66	121.08

The Prices of barley and juar in the Āīn, in relation to wheat, seem to conform to the rates at Agra as well as Lahore; but bajra tilts the similarity decisively in the favour of Agra. Bajra is not a crop of the Lahore

1. Prices & Wages, 1895, Calcutta.

region: In 1894-5 in district Lahore it occupied only 0.245% of the total cropped area.[1] In relation to wheat, therefore, its price at Lahore was naturally high, indeed exceeding it in 1894. There seems no reason to believe that in the 16th century, bajra was any more widely grown in the Lahore area. Yet the Āīn rates it much below wheat (66.67%). This, on the other hand, accords with the position of bajra in the Agra region, where it is a widely grown crop. In 1901-2 it covered slightly more than one-fifth of the total cropped area of the Agra district;[2] and its price relative to wheat in the latter half of the 19th century fluctuated around 75%, which is pretty close to the Āīn's relative price of 66.6%.

~~Another indication still that~~ the Āīn's prices were those of Agra is offered by Pelsaert's statement that during the time that the Portuguese trade was at its peak (i.e. in the last quarter of the 16th century), cloves fetched Rs.60 to 80 per man at Agra. As Moreland himself notices, this matches well with the price given in the Āīn, viz., Rs.60/man.[3]

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1. Panjab District Gazetteers, Vol. 30B, 1916, pp.50-1.
2. Nevill, District Gazetteer of U.P., Vol. p.VI.
3. Pelsaert, p.24&n. If Pelsaert has converted (as is most unlikely) the earlier price in terms of man-i Akbarī to man-i Jahāngīrī, the range expressed in terms of the earlier weight would be Rs.48-64 per man.

Incidentally, we get the prices of three commodities in the Akbarnāma in a schedule sanctioning the allowance for surveyors, in the 27th R.Y.,[1] when the court was at Agra. There are two versions of this schedule, one, from an earlier draft of the Akbarnāma,[2] reproducing Todar Mal's original text, quotes, the prices in tankas; the other in the final version states the prices in dāms. Converting the prices of the first version into dāms, it appears that the earlier schedule is not simply restated in the final text, but has been altered for some unspecified reason. We give below two sets of prices together with those in the Āīn's lists.

	Earlier draft of Akbarnāma	Final text of Akbarnāma	Āīn
wheat flour	10.67 dāms/man	18.67 dāms/man	15 dāms/man
ghī (raughan-i zard)	13.33 ,,	12.80 ,,	12 ,,
grain fodder (dāna)	91.43 ,,	114.29 ,,	105 ,,

Broadly speaking , the Āīn's normal camp prices fall within the range set by the two versions of Todar Mal's

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1. Akbarnāma, III, pp.381-3.

2. Br. Mus. Add. 27247 ff.331 -2b.

recommendations of 1583 and again suggest the affinity of the _Āin_'s prices with those of the pre-1586 period, and thus with those prevalent when the Imperial court was at Agra.

Such evidence as we have, therefore, implies that the basic agricultural price-statistics apply to Agra, though Abul Fazl might have updated them occasionally.

II

Once we have established the probability that the _Āʾīn_'s prices are the normal retail prices current at Agra during the last quarter of the 16th century, we cam compare them with those collected from modern statistics to establish changes in the relative supply of the various commodities during the intervening period. The comparison in the case of each commodity can be made by converting all the prices in the _Āʾīn_ into per- centages of the _Āʾīn_'s own price of wheat, and by similarly indexing all modern prices, on the basis of wheat prices of corresponding years, as equal to 100.

For the purpose of comparing agricultural prices, the averages of annual prices at Agra during the

decade 1861-70 seem appropriate. The prices of this decade are the earliest available in the official Prices & Wages. The decade had its normal complement of scarcities and good harvests, there being one year of scarcity, viz., 1869, and two of plenty, viz., 1862 and 1863.[1] Moreover, the effects of the railways were yet to be felt, since the railway network was extended into the region only within this decade, and it took time to carry traffic of sufficient volume to alter the price map. There is an additional merit in taking prices of this decade; the market for wheat was not yet affected by exports. Wheat exports became important only after the opening of the Suez Canal in 1869.[2]

The relative prices of five major food crops have already been compared in Table I to test the affinity of the Āīn's prices with those of Agra. While no great change can be detected in the prices relative to wheat, there are still some noticeable variations. The relative price of barley remained more or less the same, while prices of gram and bajra show an increase. The relative price of juar in 1861-70 was however, lower than in the Āīn. The opposite trends in the

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1. Atkinson, Vol. VII, p.551.

2. See Z.A. Khan, 'Railways and the Creation of National Market in food grains', IHR, Vol. IV, No.2, 1978, pp.

relative prices of juar and bajra throw some doubt on the suggestion that there has been a decline in the relative area occupied under these crops since Akbar's time.[1]

The pre-railway Agra prices of other food crops are not easily obtainable. The Prices & Wages, however, quote prices for certain commodities, at which these were bought for troops at different places, from 1875-6 onwards.[2] Taking these prices for comparison with the Āīn's, we get the following picture for pulses at Agra.

	Āīn (wheat = 100)	1875-6 (wheat = 100)
Mung	150.00	93.24
Masur	133.33	127.93
Mash	108.33	107.01*

Mung is thus rated exceptionally high in the Āīn in comparison to its relative value in 1875-6, whereas Masur and Mash had about the same relative value in the Āīn's time as in the 1870's.

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1. A.V. Desai, in IESHR, op. cit., p.47.

2. Prices & Wages, 1895, pp.250-1.

*. The price is that of Aligarh, indexed by taking Aligarh wheat price as, = 100, during 1861-70. One should have taken a decade within which 1875-6 falls as given in Atkinson, IV, p.479.

The prices of oilseeds, at Agra, for the 19th century are not available. However, from a comparison with prices at Aligarh, a city in the vicinity of Agra, we get the following indices:

	Āīn (wheat = 100)	1861-70[1] (wheat = 100)
Sesamum	166.67	179.78
Mustard	100.00	128.41

The comparison suggests a distinct rise in the prices of oilseeds in relation to wheat. This is not surprising, since these were already becoming important export crops in the 1860s.

A comparison of prices of sugarcane cannot be made since the Āīn does not give cane-prices. But we can still study prices of the different varieties of sugar. While the price of sugar at Agra during the 1860's is not available, we get its price at Aligarh, quoted as the average of 1861-70 prices,[2] as also prices current at Bulandshahr for the period 1858-67.[3] The figures below give the prices of

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1. G. Watt, vol. 6, part IV, p.173.
2. Atkinson, vol. IV, p.479.
3. Ibid., vol. III, part 2, p.77.

'white sugar' (shakar-i safaid) of the Ain and 'refined sugar' at Aligarh and Bulandshahr indexed in all cases with the wheat price as base = 100:

Ain	1066.67
Aligarh 1861-70	642.05
Bulandshahr 1858-67	688.86

There was thus a substantial fall in the relative price of sugar between 1585 and 1870. This is difficult to explain; for the metallic crushers which might have explained it, had not come into use by 1870. Could it be due to competition from West Indian or Indonesian sugar?

Abul Fazl furnishes the price for indigo current at Bayana near Agra. Bayana grew the best indigo in India; and Agra was the main market for its crop. According to the Ain, the good (shaista) Bayana variety fetched Rs.10 to 16 per man.[1] By the late 19th century Bayana was no longer an indigo centre of any importance. The price of indigo at Agra was Rs.24.36/ quarter maund, in the 1870's.[2] As noted in Chapter III, the

1. Ain, I, p.422. As pointed out by I. Habib (Agrarian System, p.86 n) the Br. Mus. MSS Add 7652, 6552 and 5645 give the price as Rs.10 to 16 per man, while Blochmann gives Rs.10 to 12 per man. I have accepted the figures in the MSS.

2. Atkinson, vol. VII, p.556.

method of extraction of dye from the plant changed from natural evaporation to boiling, the modern variety (a more concentrated extract) now being produced by the latter method. The ratio between the prices of indigo manufactured by evaporation and boiling processes has been given by Hadi as 1:1.8.[1] Accepting this ratio, we can convert the prices of 'pakka' indigo (extracted by boiling), given for Agra for 1870's into those of 'kachcha' indigo (extracted by evaporation), which can be compared with the price of the Bayana indigo given in the Āīn. The price for 'kachcha' indigo, at Agra, in the 1870's, thus works out at Rs.36.39/man-i Akbarī. For Aligarh, we have a direct quotation for gand indigo (or the dye extracted through evaporation), namely, Rs.75 to 105 per maund[2] (i.e. Rs.50.41 to 70.58 per man-i Akbarī).

Taking the Ain's prices as base, = 100, we then get the following prices for the 1870's:

Agra	2.27 - 3.64
Aligarh (gand)	4.41 - 5.09[3]

1. A Monograph on Dyes etc., p.76.

2. Atkinson, vol. 2, part I, p.476.

3. In this case the lower price of gand is compared to the minimum rate for Bayana indigo recorded in the Āīn, and the higher to the maximum rate in the Āīn.

The Agra figures suggest a rise amounting to 2.3 to 3.6 times, which is substantially lower than the magnitude of increase in wheat prices (viz., 5 times). But the Agra indigo of the 1870's was probably inferior to the Bayana indigo of the Āīn and perhaps even to the indigo grown at Aligarh. Even in Akbar's time the revenue-rate on indigo for dastūr-circle Agra, which was lowest in the ṣūba, was, 156.5 dāms, while for Kol (Aligarh) the rate was 163.12 dāms.

On comparing the prices of the Bayana indigo with those of the gand indigo, at Aligarh, which was yet likely to be inferior, the rise in the 19th century amounts to 4.4 to 5.1 times, which generally corresponds to the magnitude of increase in wheat prices (viz., 5 times). One can, therefore, infer that the relative price of indigo did not decline more than marginal by the last quarter of the 19th century, Such a decline does not indeed seem implausible in the face of the intense West Indian competition.

We may now pass on from agricultural crops to pastoral products. The comparative price indices (wheat = 100) of ghee[1] for Agra as well as Lahore are given below:

1. Prices & Wages, pp.250-1.

		Agra	Lahore
Ghi buffalo	I sort	1231.08	1455.68
,, ,,	II ,,	1161.22	1334.70
,, cow	I ,,	1313.06	1454.55
,, ,,	II ,,	1239.19	1386.36

Since the Āʾīn's price for ghi is 875.00 (with its wheat price as base, =100), this table suggests a 40% rise in the price of ghi, relative to wheat at Agra. The Lahore prices indicate almost a doubling of the relative price of ghi; but this can also be taken as a further argument for not considering the Āʾīn's prices to refer to Lahore at all.

The rise in the relative value of pastoral produce is further supported by a comparison of price of goats in the Āʾīn and those prevalent at Agra in 1850,[1] indexed with wheat, = 100.

Āʾīn	166.67 - 222.22
Agra, c.1850	232.26 - [illegible]

In the relative prices of sheep, the position is however different:

Āʾīn (hindī)	333.33
Agra, c.1850	155.04

1. Atkinson, vol. VII, p.485.

But this could be attributed to the change in taste, since the Āīn's price of mutton was 20% higher than that of goat's meat, while the c.1850 the price of sheep was about half the price of goat, suggesting a shift in demand in favour of goat's meat.

The relative prices of salt offer an interesting picture. The Āīn's price of salt is 16 dāms per man.[1] Converting this and the average prices for salt at Agra and Lahore,[2] into prices relative to wheat, we get the following indices (with wheat prices, = 100):

Āīn	133.33
Agra	256.44
Lahore	203.03

It appears that common salt was cheaper in relation to wheat in the last quarter of the 16th century than during 1861-70. The railways brought about a great fall in salt prices subsequently so that by 1894 the price of salt was about half of the price of wheat; in Agra it now sold at

1. Āīn, I, p.66.

2. Prices & Wages, pp.84 & 86.

a price 56.86% of wheat, and at Lahore, 52.04%.

The price of salt quoted in the Āin, however, seems lower than is warranted by other evidence in the Āin. In the account of sūba Lahore, Abul Fazl tells us that the merchants bought salt, near Shamsabad (Salt Range) in the Sindh Sagar Doab at 1 to 2 dāms per man and they had to pay a rupee for every 17 mans to the State.[1] This implied a cost price of 3.34 to 4.34 dāms/man, at the mines. The price at the Sambhar lake could hardly have been lower than this. Salt is an article of bulk and transport cost must have been substantial. While no estimate of the cost of transport is available for the 16th century, the English factory records give the rate of camel-carriage from Agra to Surat as Rs.1.50 per man-i Jahāngīrī in 1617.[2] The straight line (not road) distance between Shamsabad and Lahore is about one-fourth of the straight line distance between Surat and Agra; and the straight distance of Sambhar from Agra exceeds one-fourth of the latter distance.[3] Even if we assume that the cost of transport from Shamsabad to Lahore or Sambhar to Agra was

1. Āin, II, p.539.

2. Cf. I. Habib, Agrarian System, p.64 n.

3. Distances based on sheets 8A and 4A of the I. Habib's Atlas of the Mughal Empire.

one-fifth of that from Agra to Surat, and allow for the lower weight of man-i Akbarī, the price of salt in the Āīn (16 dāms per man) barely equals the calculated cost of transport only, plus the price at the mines. It would amount, at the barest minimum, to 15.34 to 16.34 dāms/man; and this makes no allowance for the merchant's profits. The Āīn's salt price thus could well be affected by a transcriptional error, though the error, if any, must have been in the original text for the best MSS support Blochmann's reading. Otherwise, we must suppose that Sambhar salt supplied to Agra was much cheaper than the Salt Range salt supplied to Lahore.

Abūl Fazl has devoted a full Chapter to the prices of different varieties of woollen, silken and cotton cloth. For comparative purposes most of these prices are unusable, since these (quoted mostly per piece) are those of luxury products, which were no longer woven in the 19th century. However, the prices for two ordinary varieties of cotton cloth, namely, gazīna and salāhatī which are given by yard lengths, seem comparable: Gazīna is classified in the Istilahat-i Peshawaran[1] as coarse, thin garha, of one yard

1. Istilahat-i Peshawaran, vol. II, p.84.

width. The Siyāqnāma[1] shows it as a material used in zīn (horse-saddle). It therefore seems comparable to the 19th-century gārha.[2]

Salāhatī appears to be coarser than gazīna. According to the Siyāqnāma it was used for lining in the tents.[3] Its comparison with 19th-century 'country cloth' or dhotar therefore seems reasonable.

Prices for the modern varieties for the period 1858-67 are available for Bulandshahr,[4] a town in the Doab not far from both Agra and Delhi. We know that the gaz-i Ilāhī used in the Āīn-i Akbarī was equal to about 32"[5] and we can further assume that the width of the hand-woven cloth has remained the same since Mughal times (being governed by the size of the traditional looms). The comparative prices in rupees per gaz-i Ilāhī (with those of the Āīn's varieties serving as base, = 100) then work out as follows:

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1. Siyāqnāma, p.117.
2. Atkinson, vol. 3, p.78.
3. Siyāqnāma, p.176.
4. Atkinson, III, p.78.
5. I. Habib, Agrarian System, pp.357-8; it seems a fair approximation to the tailor's yard of the time as well.

Salāhatī	Dhotar
100	83.25 - 166.5
Gazīna	Gārha
100	44.45

Clearly, cotton prices in real terms fell very greatly between 1595 and 1867, because while the price of wheat rose 5 times, here in the case of salāhatī/dhotar, the rupee-price remained largely the same, and in the case of gazīna/gārha, it declined to less than a half. Such a decrease cannot entirely be explained by fall in the remuneration of the spinners and weavers as a result of the invasion ~~of~~ by Lancashire. A fall in the price of cotton must be assumed.

Metals, such as iron and copper are the other commodities whose relative prices have fallen sharply.

In his chapter on the harness of Imperial elephants, Abul Fazl records the prices sanctioned for iron as 2 dāms per ser.[1] Comparing these prices with the prices of Indian iron

1. Āīn, I, p.141. Moreland, India at the death of Akbar, pp.150-1, missed this reference and depended upon the price quoted for iron pegs (120 dāms/man-i Akbarī) in the Āīn, I, 143. This, of course, suggested a much greater decline in iron price.

at Meerut in 1872,[1] we find an increase amounting 2.42 times. The English iron at the same time and place cost 4.35 times the Ā'īn's price. The price of wheat at Agra had gone up in the mean time 5.04 times. This clearly shows a considerable fall in the relative price of at least the local Indian iron by the last quarter of the 19th century.

The decline in the value of copper is more spectacular: It is not only relative but absolute. The price quoted in the Ā'īn is 1044 dāms per man (Rs.26.10/man).[2] The price of copper at Calcutta, in 1882 was Rs.31.48/cwt (Rs.15.55/man).[3] The Ā'īn's price was thus 67.78% of the price given for copper at Calcutta in 1882. In other words, while the price of wheat had gone up by about 5 times, the price of copper had fallen by 40.42%.

Copper was perhaps the main currency metal of Akbar's time. The jama' figures, the land-revenue rates and most of the prices, especially of the agricultural produce, are given in the Ā'īn in terms of dām, the principal copper coin.[4]

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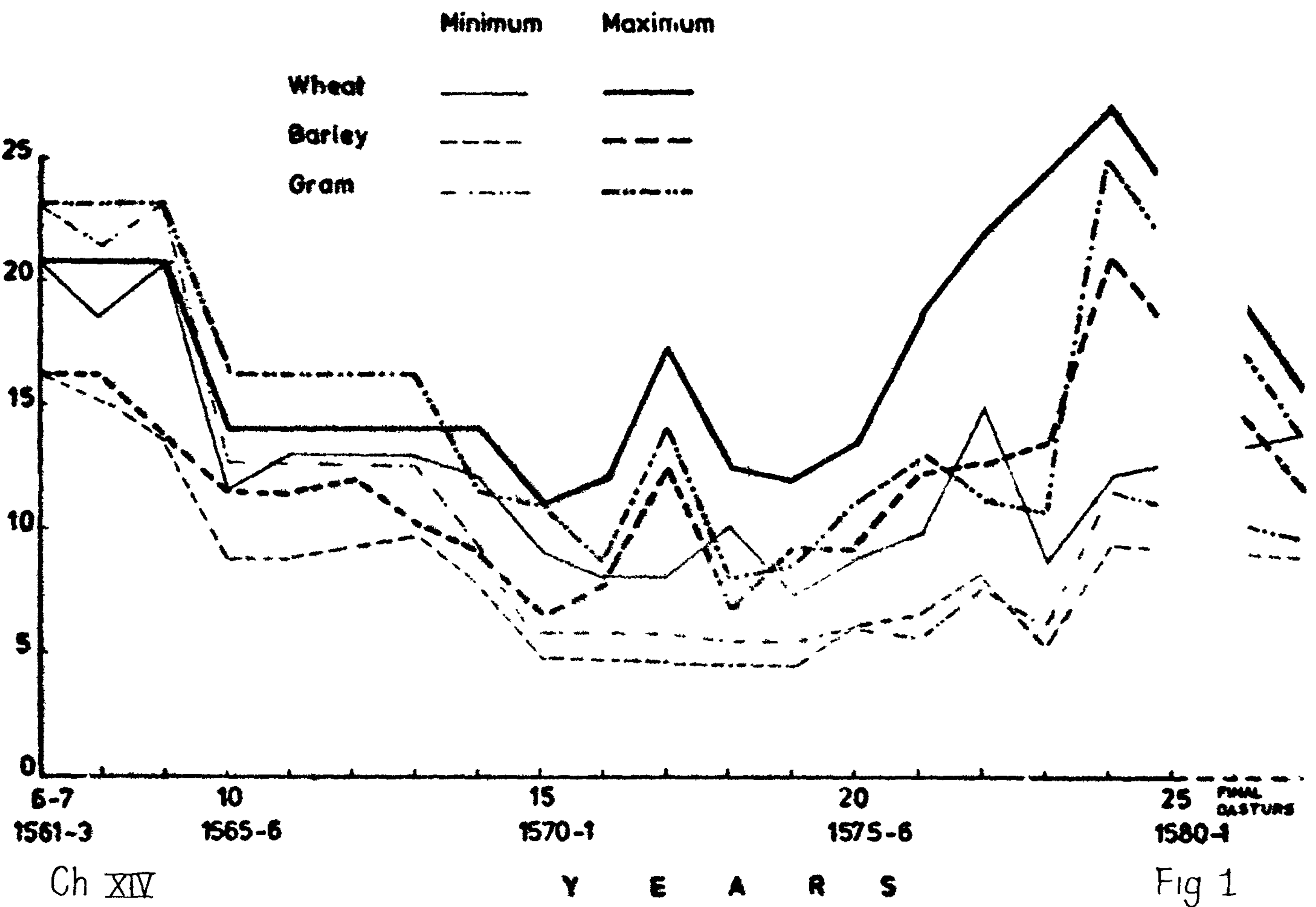
1. Atkinson, vol. 3, part II, p.67.
2. Ā'īn, I, p.33.
3. Watt, vol. 2, p.649. The price has been converted into Rupees per man-i Akbari by me.
4. I. Habib, 'Aspects of Agrarian Relations and Economy in a Region of Uttar Pradesh during the 16th century', IESHR, vol. 4, pp.217-9.

Since the Mughal land revenue rates were based on prices and yields, the prices implicit in the yearly series of rates - the '<u>Āīn</u> of 19 Years', may indicate the variations in the purchasing power of copper, if we assume the <u>rai</u>ʿ to have been constant. Fig. I gives the implicit prices calculated by dividing the land-revenue rates for certain crops for Agra by Shershah's <u>rai</u>ʿ.

Fig. I (next page)

These implicit prices are not a reliable guide to absolute magnitude of prices, for the <u>Āīn</u>'s standard <u>rai</u>ʿ has been assumed to apply everywhere. But still they probably reflect faithfully the fluctuations in copper-prices of the various crops.

The prices were apparently very high (with correspondingly low value of copper) during the years, 1561-64, whereafter a descent started, continuing uptill 1568. Between 1568 and 1575 prices fluctuated substantially. From 1575 to 1580 there is again a rise, prices reaching the level of 1561-2 in 1580. Since the final <u>dastūrs</u>, probably represent averages for the period 1570-71 to 1579-80, they should not be taken to indicate a decline between 1580 and, say, 1586,


PRICES IMPLIED BY
DASTURS OF *SUBA* AGRA
Minimum
Maximum
Wheat
Barley
Gram
25
20
15
10
5
0
6-7
1561-3
10
1565-6
15
1570-1
20
1575-6
25
1580-1
FINAL DASTURS
Y E A R S

Ch XIV

Fig 1

by which year they were definitely in operation. It is significant, however, as noted in Chapter V that the final *dastūrs* do imply prices which are close to, though still generally higher than, the *Āīn's* camp prices.

Interestingly enough, the price of copper in Europe shows a broadly similar tendency. There too it is difficult to trace any secular trend at least between 1565 and 1600.[1] The fluctuations there, are however calculated in terms of silver and could be the result of changes in the price of silver and not necessarily reflect real ups and downs in the general purchasing power of copper.

A general rise in the price of copper in India in the 16th century does not seem improbable. The sole internal source of copper of any significance seems to have been the Rajasthan mines, and there is no evidence of large imports of copper till late in the 17th century. At the same time the increasing use of artillery, must have led to a large demand for the metal.

The comparative values of the three currency metals (gold, silver and copper) can be studied at two levels: (a) By comparing the values of coined money of the different metals weight for weight; and (b) by comparing

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1. F.R. Braudel and F. Spooner, 'Prices in Europe from 1450 to 1750', *Cambridge Economic History*, Vol. IV, p.460, Fig. 6.

the quantities of gold and silver bullion and uncoined copper exchanged for the rupee. Since the Mughal currency was practically unalloyed and of the highest purity, the market value of the coin was higher than the value of its weight in metal.

The weight of a muhar, the main gold coin, was 11 māshas or 169 grains and the coin was rated at 9 silver rupees. A rupee weighed 11½ māshas or 178 grains. The copper dām weighed 20 7/8 māshas or 322.7 grains; officially, 40 dāms went to a rupee.[1] We therefore get the following equations for relative values of the coined money, weight for weight.[2]

$$11\ G = 11.5 \times 9\ S$$

$$\text{and } 11.5\ S = 20.875 \times 40\ C$$

1. Āīn, I, pp.26-7. For weights of coins in grains see Hodivala, Historical Studies in Mughal Numismatics, pp.224-44; Irfan Habib, Agrarian System, pp.367 and 380-94; 'Currency System of the Mughal Empire', Medieval India Quarterly, vol. IV, nos.1-2, pp.1-21.

Irfan Habib has calculated the weight of dām as 322.7 grains, accepting Hodivala's weight of a tolcha (185-5 grains). However, the heaviest of Akbar's extant dāms in the National Museum, Calcutta, rise to 325 grains (no.492); there are two other coins exceeding 322.7 grains, and weighing 323.5 grains (no.391 and 446). But the divergences from the calculated standard are not large enough to affect the relative values more than marginally.

2. G, S and C stand for gold, silver and copper respectively.

We get the following quantities of equal value in the three metals (with weight of silver as 100).

Gold	: 10.628
Silver	: 100.000
Copper	:7260.870

Taking the relative values of bullion we find that 1 tolcha of gold cost 9 rupees, and one rupee bought 1 tolcha and 2 ratis of silver. Copper sold at 1044 dāms (i.e. Rs.26.10) per man.[1] Therefore:

1 rupee bought	0.111	tolcha	of	gold
,, ,, ,,	1.0203	,,	,,	silver
,, ,, ,,	122.605	,,	,,	copper.

Indexing these quantities with the weight of silver, = 100, we get:

Gold	10.885
Silver	100.000
Copper	7,835.040

1. Ain, I, pp.31-3.

There seems to be very little difference between relative values of coined gold and gold bullion. The difference in the relative values of coined and uncoined copper is however rather large. The reason for this obviously was the loss (2½%) in smelting copper and the proportionately higher seigniorage and minting charges.[1]

In the last two decades of the 19th century gold at Madras sold at Rs.53.57 per oz. in 1889-90,[2] the price of silver, in the same year was Re.1/tola[3] and that of copper was Rs.31.48/cwt. at Calcutta in 1882.[4] Calculating the quantities sold for a rupee and indexing them by taking silver weight as base, = 100, we get indices that can be compared with those of the 16th century.

Table II

	Āīn coined	Bullion/ uncoined	1880's Bullion/ uncoined
Gold	10.628	10.885	4.537
Silver	100.000	100.000	100.000
Copper	7,260.870	7,835.40	13,727.7

1. Āīn, I, pp.31-3, gives the necessary details.
2. Watt, Vol. II, p.649.
3. Ibid., Vol. VI, part 3, p.243.
4. Ibid., Vol. III, p.649.

This table shows a substantial rise in the silver price of gold between the 16th and 19th century, while the price of uncoined copper shows a heavy fall in terms of silver. This contrasts greatly with the continuous rise in the value of copper in relation to silver in the 17th century.[1]

The changes in the rupee prices of the various commodities established by us in relation to wheat are set out in Table 4. In the last column the relative prices for 1861-70 have been indexed, taking the relative prices of the same commodities in 1595 as base, = 100.

Table III (next page)

The results can be summed up as follows:

(i) In the relative price of food-grains the change between 1595 and 1861-70 was within ± 20%. While barely masur and mash more or less maintained their position; juar and the mung pulse show an appreciable fall. The relative prices of oilseeds have risen though only marginally.

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1. Aziza Hasan, 'The Silver Currency Output of the Mughal Empire and Prices in India during the 16th and 17th centuries', IESHR, VI (1), 1969, pp.100-101.

Table III

		Agra, 1861-70	
	A	B	B as % of A
Wheat	100.00	100.00	100.00
Barley	66.67	63.54	95.31
Juar	83.33	73.41	88.10
Bajra	66.67	76.48	114.71
Gram	66.67	78.98	118.46
Mung	150.00	93.24[a]	62.16
Masur	133.33	127.93[a]	95.78
Mash	108.33	107.01[a]	98.78
Sesame	166.67	179.78[b]	107.99
Mustard	100.00	128.41[b]	128.41
Refined Sugar	1066.67	642.05[b]	60.02
Indigo	3,333.33 - 5,333.33[c]	2423.56-3393.27[d]	72.71 - 63.62
Ghee (<u>ghī</u>)	875.00	1161.22-1313.8	132.71 - 150.14
Goat	166.67 - 222.22	232.2-310.8[e]	139.35 - 139
Sheep	333.33	155.04	46.51
Salt	133.33	256.44	192.33
<u>Salāhatī</u>, per <u>gaz</u>	16.67-33.33	6.995[f]	41.93 - 20.91
<u>Gazīna</u>, per <u>gaz</u>	166.67-500.00	18.675[f]	11.20 - 3.74
Iron	666.67	505.05[g]	75.76
Copper	8,700	996.83[h]	11.46

(a) Agra, 1875-6
(b) Aligarh, 1861-70
(c) Bayana
(d) Aligarh, 1872-3
(e) Agra, 1850
(f) Bulandshahr, 1858-67
(g) Meerut, 1871-2
(h) Calcutta, 1882 (but Agra wheat, 1861-70, as 100).

(ii) In the case of sugar the relative price declined by 40%. The price of indigo too declined but not significantly.

(iii) The price of pastoral produce in terms of wheat registered an appreciable rise.

(iv) The price of salt in relation to wheat almost doubled. (This preceded a subsequent decline).

(v) The price of cotton cloth relative to wheat declined substantially.

(vi) The relative price of iron declined by a quarter, whereas, the fall in the price of copper was far more considerable, viz., by about 88%.

III

Abul Fazl records the wages for a number of skilled and unskilled jobs. These are found scattered in the text, except for the wages in the 'Building Establishment', which are set out in a separate Chapter.[1] The wages are

1. Āin, I, p.170.

those sanctioned for the employees and workers in the Imperial Establishments.[1] A majority of the servants especially those tending animals, and birds, or otherwise employed in animal stables, drew monthly salaries; but for most of the skilled jobs the wages quoted are piece-wages.[2] Daily wages were sanctioned only in the Building Establishment and for some unskilled, low-paid workers such as grass-cutters and boy-helpers in the stables.[3]

From such data it is not possible to work out the average wages, since we do not know the total number of workers in each category, and the numbers and wages of many categories, have not come down to us at all. Moreover, piece wages cannot be compared with time-wages. The best course would, therefore, seem to be, first, to establish the wage-level of the lowest paid, unskilled workers, such as sweepers, water-carriers, bamboo-cutters, grass-cutters, etc., being persons who traditionally obtained the lowest wages down to modern times. The wages of these workers, recorded in the Āʾīn, are set out below.

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1. Āʾīn, I, pp.134-5, 143-4, 149-50, 151.
2. Ibid., pp.12, 14, 16.
3. Ibid., pp.135, 144, 150.

Table IV

Wage earner	Monthly salaries	Quoted/Implicit daily wage
Sweeper in horse-stable	65 <u>dāms</u>	2.17 <u>dāms</u>
Water-carrier ,,	100 ,,	3.33 ,,
,, I in Building Establishment		3 ,,
,, II ,,		2 ,,
Bamboo cutter ,,		2 ,,
Sawyer ,,		2 ,,
grass cutter		2 ,,
meth		3 ,,
,, on march		3.5 ,,
helper in stable		2 ,,

These wages as they stand give the impression that those tending animals in the Imperial Stables were more favoured than their counterparts elsewhere. They were not only paid by for month; but their daily wages also worked out to be slightly higher. The daily wage of the water-carrier furnishes a clear instance of such favoured treatment for stable staff. Even the water-carrier, I Grade, in the Building Establishment got less than the ordinary water-carrier in the horse stables. This privileged position seems to have been partly counter-balanced by the higher

responsibilities of the stable staff, since any suspected negligence immediately resulted in fines. The sweeper and water-carrier in the stables were liable to lose one-fourth of their (monthly) salary if the horses became lean.[1] On the other hand, there was a system of rewards for stable staff; rewards were given on special occasions such as when the Emperor rode an elephant or horse, but these occasions were likely to be rare in the careers of ordinary staff.

On the whole, then, 2 dāms per day seem to represent the minimum wage of the unskilled or 'menial' workers, though wages below this rate too are recorded. For some skilled and semi-skilled workers the sanctioned wages were less than 2 dāms per day:

	Monthly salary	Implicit or recorded daily wage
Mahāwt paid by faujdār	40 dāms	1.33 dāms
,, of Mokul Elephant	50 ,,	1.67 ,,
Bhoi female ,,	50 ,,	1.67 ,,
Hadā in dehbāshī, Emperor's own (khāsa) stable	30 ,,	1.00 ,,
Lowest paid chela (slave)		1.00 ,,

1. Āīn, I, p.164.

These salaries seem unreasonably low; and one may suspect that these were supplemented by some other forms of payment or advantage.

The lowest wage rate in the Āīn can be compared with the wages of corresponding categories in the second half of the 19th century. The wages sanctioned for the Building Establishment can be said with some degree of certainty to be those of Agra, since in the same chapter Abūl Fazl refers to Fatehpur as the Capital. The wages quoted elsewhere may relate either to Agra or to Lahore - the two capital cities.

Moreland seems to be of the view that since the wages in the Āīn are those of the Imperial Establishment, these had an upward bias and therefore should be deemed comparable only with the wages prevalent at the "centre of greatest demand in Northern India."[1] In Northern India one would expect the greatest demand of labour to have centred at Calcutta and, later on, at places like Delhi and Kanpur (Cawnpore).

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1. W.H. Moreland in JRAS, 1817, p.822.

The wage statistics, for the latter half of the 19th century, available to us, are rather limited. The official Prices and Wages, record wages from 1873 onwards, but the information even then is inadequate. Wages are given only for 'able bodied agricultural worker', 'syce' and one omnibus category of skilled workers designated 'mason, carpenter, blacksmith'.

When we compare (as in the Table below) the wages (money wages as well as real wages, in terms of wheat) at Calcutta, Delhi, Kanpur and Agra in 1874, we find that the Calcutta wages[1] were the lowest and those of Agra the highest, with Delhi and Kanpur coming next.

	Horse-keeper		Mason/Carpenter/Smith	
	in rupees	in seers of wheat	in rupees	in seers of wheat
Calcutta	4 - 5	49.80 - 62.25	5-7.5	62.25 - 93.34
Kanpur	4	69.40	7.5	130.12
Delhi	4	77.08	10	192.12
Agra	5	82.00	14.67	240.88

1. Of course real wages at Calcutta at that time ought to be measured in rice rather than wheat. But for comparison with the Āīn, wheat can be the only index.

The Prices & Wages do not furnish wages for Lahore. The Lahore District Gazetteer gives without any specification, the highest and lowest wages of skilled and unskilled workers at Lahore in 1870-71.[1] The range for skilled worker is Rs.9.3 to 15, or, in terms of wheat, 210.3 to 336.30 seers per month, and, for unskilled Rs.3.75 to 7.50, or 84.08 to 168.15 seers of wheat. This indicates that real wages at Lahore in 1870-71 were at about the same levels as at Agra in 1874. In other words, it should not much matter whether one takes the late-19th century wages at Agra or at Lahore, to compare with those of the Āʾīn.

Though a comparison of real wages cannot at this stage be made, we can still convert modern wages into quantities of wheat to compare them with the Āʾīn's wages similarly converted. The comparison of wages in terms of wheat has the further merit in that it meets the objection that the Āʾīn's wages, presumably sanctioned at the Imperial Camp, had to be high because of high prices. Once, however, they are adjusted to wheat prices at the camp the Āʾīn's wages become comparable to wheat wages at Agra in the 19th century.

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1. Panjab District Gazetteers, vol. 30, part B, p.48.

The modern wage-data available for Agra are not sufficient for a fuller comparison. But more detailed quotations of wages for other western U.P. towns are available. In the Table below, wages for the lowest paid strata in Agra and other towns are set out, converted into daily wheat-wages, and are compared with wheat wages worked out from the Āīn for the corresponding categories.

Table V (next page)

The Table shows that for the unskilled wages in the 19th century we get two floor-levels, one true for Muzaffarnagar and the other for Agra, Meerut, Bulandshahr and Kanpur. The minimum wages in Muzaffarnagar hardly came up to 2 seers of wheat per day, which is even less than half of the lowest unskilled wage in the Āīn (2 dāms or 4.44 seers of wheat). The floor-level for the other places though higher than Muzaffarnagar is still no higher than 60% of the minimum level in the Āīn's wages with the exception of the porter's wage at Agra which barely exceeded 75% of the latter. The conclusion seems inescapable, that the unskilled

Table V

Daily Wages in seers of wheat (standard maund = 82.28 lbs avdp)

Wage-earner	(a) Āīn 1595	(b) Agra 1871-2	(c) Bulandshahr 1858, 1863, 1867	(d) Meerut 1815*	(e) Muzaffarnagar 1858-67	(e) Muzaffarnagar 1875	(f) Kanpur 1879-90
Sweeper	4.86				1.55		2.68
Water-carrier	4.86 - 6.68			3.2	1.48		3.09
Labourer/piyāda in stable	4.48			3.2			
Herdsmen/meth	4.48 - 6.68		2.53 - 4.81		2.64		
Coolie, porter/ helper in stable	4.81	3.35	2.28 - 4.05	2.4		2.25	

(a) Āīn, I, pp.144, 138.

(b) Atkinson, vol. 7, p.550.

(c) Ibid., vol. 3, part II, pp.77-78.

(d) Ibid., p.303.

(e) Ibid., pp.583, 4.

(f) Prices & Wages, p.303.

* Wages here are in terms of wheat flour (ordinary variety).

urban wages (in terms of wheat) declined considerabaly between the 16th and 19th centuries. The low paid unskilled worker in the 19th century received the money equivalent of a little above one-half of the quantity of wheat that his ancestors could buy from his total wage at the close of the 16th century.

This conclusion is in accord with the inferences drawn by Smith, that prices went up by 500 to 600 per cent while wages of unskilled labourers increased hardly by 250 to 300 per cent by the end of the 19th century;[1] or in other words that the real wages fell by one-half during the period. Though Smith's estimate of modern wages seems based on a rather rough-and-ready method,[2] his conclusion would seem to be nearer the truth than that of Moreland, who thought that real minimum wages in 1595 and 1910-14 stood at about the same level.[3]

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1. V. Smith, Akbar the Great Mogul, p.286.

2. Smith (op. cit.) based his estimate of 19th-century wages on his own experience of paying wages to unskilled servants in U.P. for 30 years (1870-1900). He believed the same rates to be true for land-less labourers as well.

3. Moreland, JRAS, 1816, op. cit., p.824.

One may now analyse the information on wages of skilled and semi-skilled labourers. For much of skilled and semi-skilled work, the Āīn quotes piece-wages, which are very difficult to compare with modern rates. In the Building Establishment, however, daily rates were sanctioned for beldārs (diggers), thatchers, carpenters and gilkārs (plasterers).[1] Most of the higher-paid attendants of animals, such as mahouts, bohī, sāīs ('syce', horse groom) were paid by the month. For many of these jobs, except for 'syces', comparable official quotations rates from the 19th century are lacking. The Āīn gives monthly rates too for boatmen and palanquin-bearers; for these we have comparative rates from modern times. The following Table gives wages converted into wheat for all these skilled and semi-skilled categories, wherever we have modern rates available to compare with the Āīn.

Table VI

(next page)

The movement of wages (in terms of wheat) for semi-skilled jobs over the three centuries appears to be

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1. Istilahat-i Peshawaran (with "a" written above the "w"), vol. I, p.84, describes gilkārī as plastering; therefore gilkār should be 'plasterer'.

Table VI

Daily Skilled Wages in seers of wheat (standard maund = 82.82 lbs avdp)

	Āin(a) 1595	Agra 1871-2	Agra(b) 1874	Bulandshahr(c)	Meerut(d) 1815	Muzaffarnagar 1850	Muzaffarnagar(e) 1875*	Kanpur(f) 1879-90
beldār	6.72- 7.84				3.2		3.74- 4.49	
gilkār/mason	8.96-15.69		8.03	4.80- 9.63			7.49-11.98	
carpenter	4.48-15.69	7.03-10.68	8.03	4.13-10.13	7.53	4.7		7.7
thatcher	6.72						3.74	
boatman	7.47			3.04- 4.81		2.73		
palki-bearer	8.96-11.95				4.80			
syce	7.62(minimum)		2.74					

(a) Āin, I, pp.170-1, 204, 190, 144.

(b) Atkinson, vol. 7, p.550.

(c) Atkinson, vol. 3, part II, pp.77, 78.

(d) Atkinson, vol. 3, part II, p.303; Prices & Wages, p.

(e) Atkinson, vol. 3, part II, pp.583, 584.

(f) Prices & Wages, p.303.

* Wages here are in terms of wheat flour (ordinary quality).

similar to that of unskilled wages. The wages of beldār and thatcher declined to almost half the earlier level in terms of wheat. This fall was not confined to the building industry only, since the wages of the palanquin-bearer too have gone down in about the same proportion.

The Āīn's range for the wages of carpenters of different grades is very wide, viz., 2 to 7 dāms a day. The rate for carpenter Grade V seems too low, being equal to that of a sawyer and bamboo-cutter. The rate for carpenter grade IV was only 3 dāms, the same as for the thatcher. One may, therefore, infer that carpenters of grades IV and V were perhaps not full-fledged carpenters but apprentices. The late-19th century rates for carpenters vary from 7 to 12 seers of wheat a day, except in Bulandshahr and Muzaffarnagar where the minimum rates are 4.13 and 4.17 seers respectively, being more consonant with the wages sanctioned for grade V in the Āīn. We thus discern a decline of 25 to 33 per cent in the 'wheat wages' of the higher grades of carpenters. That is, though the wages declined substantially, between c.1600 and 1870, the fall is here not as large as in the cases of unskilled and semi-skilled categories. But on the other hand, the wages of gilkārs (plasterers) declined by almost 50 per cent, and we find the same trends in the wages of boatmen.

The steepest decline is noticeable in the wages of the 'syces' or grooms. Even the lowest paid groom in the Imperial Establishment received a wage (in terms of wheat) three times that of his counterpart in the last quarter of the 19th century. Since Modern rates for other animal attendants are not available, it is not possible to see whether the wages of workers tending other animals have fallen equally sharply. But a generally steep fall in the wages of this category might be expected, due to the decline in the military importance of elephants, and camels as well as horses.

It then seems pretty well established that urban wages, in terms of wheat, were about 50 per cent higher at the close of the 16th century than in the latter half of the 19th century. We shall now attempt a consideration of whether the urban workers in Mughal India were in fact better off than their counterparts in the late 19th century, in respect of the entire range of essential consumption goods. We have already seen that the prices of various commodities have moved in different directions over these centuries. The prices of foodgrains, relative to wheat, have largely remained stable, with a margin of ± 20%; but there would seem to have been a large increase in the relative prices of pastoral products. On the other hand, we observe a substantial fall in the prices of industrial products, notably cloth.

To translate these varied alterations in prices into changes in the purchasing power of wages in terms of each commodity, it is necessary to establish the comparable lowest wage-levels. We have seen that two dāms per day represent the lowest wages of unskilled workers in the Āīn: The wages of porters and navvies (viz. 2½ anna/day) may be assumed to represent the lowest unskilled wages at Agra in 1871-2.[1] Purchasing power can now be calculated by taking the prices given in the Āīn and the prices at Agra for 1871-2 abstracted from the official Prices & Wages. The Prices and Wages do not give the prices for sugar, ghī and cloth. As already mentioned, the prices of these commodities are quoted in one of our sources for Bulandshahr which also furnishes the wages of porters, for 1867.[2] For expressing wages in terms of sugar, ghī and cloth, I have therefore used the prices at Bulandshahr for 1867, applying them to wages of porters given for that year.

Table VII gives the purchasing power of monthly wages in 1595 and 1871-2 (Agra) and 1867 (Bulandshahr) stated in maunds (of 82.28 lbs) and (in the case of cloth) in modern yards.

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1. Atkinson, vol. VII, p.551.
2. Atkinson, vol. 2, p.77.

Table VII

Commodities	(a) 1595	(b) 1867/1871-2	(b) as % of (a)
wheat	3.36 maunds	2.53 maunds	75.29
barley	5.04 ,,	3.19 ,,	63.29
gram	5.04 ,,	2.49 ,,	49.40
juar	4.03 ,,	2.81 ,,	69.73
bajra	5.04 ,,	2.35 ,,	46.63
ghi	0.38 ,,	0.20 ,,	52.63
sugar	0.31 ,,	0.32 ,,	103.23
salt	2.52 ,,	1.08 ,,	42.86
salahati/_dhotar_	26.67[1] yds	44.40 yards	166.48
gazīná/_gārha_	2.67[1] ,,	16.00 ,,	599.25

It appears that the purchasing power of wages in terms of cereals was significantly higher in 1595 than in the latter half of the 19th century. It was a quarter more in wheat, while in the case of inferior foodgrains, it was 30 to 50% higher. The unskilled worker in Akbar's time was able to buy twice as much _ghi_ as his successor could purchase in 1867; while of sugar the worker of Akbar's time could have

1. The prices taken are the lowest prices for _salāhatī_ and _gazina_.

had just a little less. In case of salt the purchasing power of his wages was 57% higher (the price of salat was, however, to fall very markedly by the closing decade of the 19th century). The unskilled worker in 1595 could therefore have had food in much greater quantity than in the latter half of the 19th century.

The wage-earner in the 19th century was more fortunate in respect of his clothing for the relative purchasing power of wages in terms of cloth had greatly increased in the intervening period. In respect of the cheapest variety of cloth the purchasing power of the lowest wages in 1867 was 67% higher than in 1595.[1]

To see the trends in the purchasing power of skilled wages, one can compare the purchasing power of the wages sanctioned for carpenter grade I in the Āīn (7 dāms per day or 210 dāms a month) and the highest wages of the carpenter at Agra in 1871-2 (viz., Rs.15 per month). Again for ghi, sugar and cloth the data are those of Bulandshahr.

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1. We will reach a similar conclusion even if we take data for Agra and Lahore, relating to 1886-95, see IESHR, vol. XIV, No.3, p.398.

Table VIII

Commodities	(a) 1595	(b) 1871-2	(b) as % of (a)
wheat	11.76 maunds	8.10 maunds	68.88
barley	17.65 ,,	10.20 ,,	57.79
gram	17.65 ,,	7.95 ,,	45.04
juar	14.12 ,,	9.00 ,,	63.74
bajra	17.65 ,,	7.50 ,,	42.49
ghi	1.34 ,,	0.75 ,,	55.97
sugar	1.10 ,,	1.20 ,,	109.09
salt	8.82 ,,	3.45 ,,	39.12
salāhatī/dhotar	93.33 yards	166.67 yards	178.58
gazīna/gārha	9.33 ,,	60.00 ,,	643.09

The fall in the purchasing capacity of skilled wages in terms of foodgrains appears to be a little more marked than it was in the case of unskilled wages.

To translate the varied indices of purchasing power of wages for individual commodities, into a single index of real wages, one needs to estimate the quantity of each commodity that the workers actually consumed (as against the quantity of each commodity they could theoretically buy if they spent their entire wages on that commodity). A survey of the conditions of the lower classes in U.P. ('North-western

provinces and Awadh') in 1887-8[1] offers us one means of estimating the amount of food and cloth bought by the lowest paid worker as well as by those comparatively better off. The data drawn from this Survey are set out in Table IX. For calculating the grain consumption per adult male, out of figures for families of different sizes and compositions, I have assumed the following consumption ratios:

man	:	woman	:	boy/girl
100		75		50

For cloth, the assumed ratios are:

man	:	woman	:	boy	:	girl
60		100		30		50

It is repeatedly stated in the Survey that almost none of the unskilled poor consumed wheat, except on festivals or some very rare occasions, and that their food usually consisted of inferior grains only; cheap vegetables or arhar pulses were irregularly consumed.

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1. A collection of papers connected with an Inquiry Into the Conditions of the Lower Classes of The Population, Especially in Agricultural Tracts, In the North-Western Provinces and Oudh, Instituted in 1887-8, pp.73-132, Govt. Press, Naini Tal.

Table IX

Wage-earner	Grain consumed per adult male (seers/day)	Clothing obtained per adult (yards/year)
cultivator	1.00	26.01
cultivator	1.00	23.23
labourer & cultivator	1.11	25.40
weaver & labourer	0.63	14.41*
cultivator & labourer	0.89	34.03
labourer	1.14	31.67
koli	0.95	25.91
cultivator & cart driver	1.38	27.12
cultivator & grain weigher	0.94	22.22
labourer	0.86	26.67

* Supplemented by old clothes given by employers.

From the data taken from the Inquiry, the average coarse grain consumption comes to 0.99 seers per day or 9.03 maunds per year; and the average cloth consumed per adult male, to 26.9 yards.

Taking the demographers' conventional size for a family, namely, one adult male, one adult female and 2.5 children, one can calculate the quantities required for the family and can then convert these into amounts in dāms, on the basis of the prices quoted in the Āīn. Since we have assigned different ratios to man, woman and child, for diet and clothing, to calculate the grain consumption of the conventional family of 4.5 members, the average per adult should be multiplied by 3, while for cloth the factor should be 4.[1]

The annual grain consumption of a standard family, in this way, comes to 27.10 maunds. The average of the prices for barley, gram, juar and bajra in the Āīn is 12.64 dāms/maund the amount spent on 27.10 maunds of these foodgrains (assuming all to have been consumed in equal

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1. Diet $100 + 75 + 50 + 50 + 25 = 300$

$\frac{300}{100} = 3.0$

Cloth $60 + 100 + 30 + 50 + 0 = 240$

$\frac{240}{60} = 4.0$

quantities) should have been 342.64 dāms per year. The estimate for cloth obtained per year is 26.92 yards per family. Taking the lowest prices of salāhati in the Āīn (2 dāms per gaz-i Ilāhī or 2.25 dāms per yard) the amount spent on cloth should have been 242.26 dāms. The total minimum expenditure on foodgrains and clothing should thus have been 584.9 dāms per annum. The urban worker with minimum wages (2 dāms/day or 730 dāms/annum) therefore should have spent 80.12% of his total income on foodgrains and clothing (46.94% on grains and 33.19% on clothing). This implies that after paying for foodgrains and cloth he was still left with 145.1 dāms or 19.88% of his total income. Even if he had to pay about 5% of his total income in rent and cesses etc., nearly 15% of his income must have remained with him. Out of this he could have purchased salt, raw sugar, pulses, vegetables, ghī, etc., wherewith to supplement his essential diet.

On the other hand, if we allow the same amount of grain and cloth to the late-19th century unskilled urban worker (e.g. porter at Agra who received 2½ annas per day or Rs.57.03/annum) and calculate his expenditure on the basis of prices at Agra in 1871-2, we find that the porter's income was insufficient to buy these quantities of inferior grain and cloth. His expenses should have come to Rs.55.65 (97.58% of his total income) on foodgrains and Rs.10.12 (17.75%) on

clothing. This meant a deficit of 15.32%, with no allowance made for rent or any expenses on additional diet. It seems, then, that though there was a drastic fall in the proportion of income spent on cloth, the rise in the proportion of income required for foodgrains had gone up by more than 50% (being 97.58% instead of 46.94%).

The average food consumption that we had assumed here is based on rural consumption in 1887-8; and the urban level might perhaps have been comparatively lower than rural (in respect of food at least) in both periods. In that case the urban worker in the late-19th century might not actually have incurred a deficit of 15%; but then the expenditure on other items as well as savings of the late-16th century worker should, by the same token, have been higher than 14.8%. It would seem a fair assumption, then, that the late-16th century unskilled worker was much better off than his successor in the 19th century. Given the data we have, the real urban wages at the close of the 16th century would seem to have been about 35% higher, than in the latter half of the 19th century.

The decline in real wages of the skilled workers is difficult to estimate, since there is no certain measure for comparing wages of skilled jobs. Nevertheless one may still hazard a comparison of skilled real wages by taking the

wages sanctioned for carpenters grade I in the Āin (7 dāms/day) and the highest rates for carpenters at Agra proper in 1871-2 (Rs.15/month). To estimate the consumption level and pattern, I take the average food and cloth consumption of some skilled rural workers and better-off strata in 1887-8, as reported in the official Inquiry.[1]

Table X

Wage-earner	Grain consumed per adult male (seer/day)	Clothing obtained per adult (yard/ year)	Expenditure on other items as % of total exp.	
			on diet items other than grains	on other items
Carpenter	0.80	23.41	30.90	7.9
Oil Man & Money lender	0.86	26.47	49.13	11.87
Gold Smith	1.72	54.79	39.25	12.13
Carpenter	1.20	27.23	22.27	3.75
Carpenter & Cultivator	1.00	32.55	7.87	2.92

1. Collection of Papers, op. cit., pp.73-1833.

The average consumption of grain per adult male in 1887-8 works out at 1.12 seer per day and of cloth 32.89 yards per year. These persons consumed wheat also and a noticeable part of their expenses went to purchase articles of diet other than grain. After paying for their diet and clothing, a large part of their income still remained to be spent on other items or put into savihgs.

Proceeding on lines followed in the case of unskilled workers, our estimate for standard family of skilled worker comes to 30.66 maunds of grain and 129.36 yards of cloth por annum.[1] Multiplying these by the averages of the prices for wheat, barley, gram, juar and bajra in the Ā'īn, (13.684 dāms/maund) and the price for the better variety of salahati (4.5 dams/yard) respectively, the expenditure on foodgrains comes to 419.55 dāms (16.42% of wages) and on clothing 582.15 (i.e. 22.78%). This means that the expenses incurred on the quantities of foodgrains and cloth indicated by the 1886-7 Survey amounted to only 39.25% of the total income of the Ā'īn's carpenter, grade I.

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1. The assumed ratio for cloth consumption here is

Man	:	Woman	:	Girl	:	Boy	:	Small child
75		100		60		50		10

i.e. 3.93

By the same yard-stick, the highest paid carpenter at Agra in 1871-2 spent Rs.54.57 (30.32%) on foodgrains and Rs.32.31 (17.95% on clothing.[1] Thus the carpenter at Agra in 1871-2 spent nearly half (48.27%) of his total income on food grains and cloth, while his predecessor, at the close of the 16th century, spent only 39.21% of his wages to obtain the same quantities.

This suggests a considerable fall in the real wages of the skilled artisans too. But here, it could be argued that the skilled artisan of 1595, with 60% of his income left with him, could buy other goods only from a very narrow range of high-priced commodities whereas his late-19th century successor with 50% left had a larger choice from lower-priced industrial goods. Yet a case in the opposite direction could also be made out by reference to the large amount of unemployment and depressed incomes of weavers in the 19th century. Unluckily, the Āīn does not furnish us any data on the wages of the weavers. It is possible that, had a comparison of real wages of weavers in 1595 and the late-19th century been possible, a very marked fall in real wages could have been established even from the per centage of expenditure on the barest necessaries.

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1. The cloth here means gārha, price 4 anna/yard.

A fall in real urban wages between c.1600 and c.1875 may, therefore, be accepted as a practically established fact. But higher urban wages in 1600 do not necessarily mean that the level of general consumption (rural as well as urban) was also as much higher. Indeed, it is possible tgat the large extraction of agricultural surplus by way of land-revenue and its distribution amongst an urbanised ruling class might have placed the Mughal towns in a more favourable position with regard to supply of agricultural produce than the decaying towns of the 19th century. If restriction on rural migrations had any practical force, it is possible that the urban labour force did not expand sufficiently to press up prices of agricultural goods in the towns and so lower real wages. Conversely, however, in view of the drain of supplies to the towns, one might expect a repressed agricultural population, with consumption levels quite possibly no higher than those recorded in 1887-8 and possibly even lower. But unless data on agricultural wages in the 16th and 17th centuries become available, one can do little more than caution against inferring a higher per capita consumption for the whole population on the basis of higher urban real wages for c. 1600.

Chapter XV

THE SILVER INFLUX AND THE MONEY SUPPLY

I

So far we have treated the Mughal Indian economy as if it was a static structure, since we have focussed on the quantitative data at a particular point of time, c.1600. In a large part, this has been not a matter of intention, but one of compulsion. For the close of Akbar's reign (1595-1600), we have information, unique in its scale and quality; its very uniqueness inhibits statistical comparisons with any earlier or even later stage, for which similar data are simply not available. As a result, though the elements of the structure of the economy about 1600 may be discerned in quantitative terms, its dynamics tend to be overlooked or obscured. Only in one particular sphere does it seem possible to study the economy in the process of movement; the sphere is that of the monetary system of the Mughal Empire, embracing both money supply and prices.

The 16th and 17th centuries are recognised on all hands as constituting a period of world-wide monetary disturbance. The period was marked by the global commercial expansion

of Europe, the influx of bullion from the New World, and the phenomenon known to European economic historians as the Price Revolution. The questions as to how far the influx of silver from the Spanish American mines was a causative factor in the 16th century Price Revolution and how far the latter, in turn, a factor in capital formation for the subsequent Industrial Revolution, have engaged the attention of economic historians for a long time.[1] Individual opinions on the cause-and-effect sequence may vary, but there is hardly any disagreement that the actual configuration of European economic history of the two centuries owed a very great deal to these processes.

Students of economic history, then, must inevitably ask whether the influx of bullion and the attendant or simultaneous Price Revolution was extended to other parts of the world; and this must primarily involve a study of the size of the bullion influx during the 16th - 17th centuries, as well as the impact that it had on money supply and prices within

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1. See, e.g., Earl J. Hamilton, American Treasure and Price Revolution in Spain, 1501-1652, Harvard University Press, 1934; P. Vilar, 'Problems of the formation of Capitalism', Past and Present, No.10, Nov. 1956, pp.15-38; Braudel and Spooner, 'Prices in Europe from 1450 to 1750', Cambridge Economic History of Europe, IV, ed. F.E. Rich & Wilson, Cambridge, 1967. The entire debate is competently summed up by Immanuel Wallerstein in his The Modern World System, New York, 1974, the result of very wide reading of almost the entire range of literature on the subject.

different countries outside Europe. The Mughal Empire undoubtedly constituted a large economic region of the world at the time. Data about bullion stock, inflow of bullion, bimetallic ratios, price-levels, etc., are necessary for any meaningful debate on whether any great disturbance of the economy occurred in Mughal India through the influence of the silver influx and the attendant or consequent monetary phenomena. Whether the inflation and the consequent 'redistribution' of wealth could or could not lead to capital formation (a la Hamilton) is a question to be considered at a still further stage of the debate (and not by us in our present discussion).

Braudel and Spooner have estimated the gold and silver stock for Europe in 1500 by putting together the statistics provided by Hamilton and the data of comparative prices of gold and silver in two simple equations. According to Hamilton the total physical transfer of gold and silver from the Spanish American possessions into Spain between 1500 and 1650 amounted, respectively, to 181.3 and 16,886.8 metric tons. According to evidence assembled by Braudel and Spooner, the bimetallic ratio (value of gold in terms of silver) changed in Europe from 1:10.5 to 1:14.5 during this period. From this Braudel and Spooner deduce that if 'x' was the amount of gold

and 'y' the amount of silver in 1500, then

$$10.5x = y$$

$$\text{and } 14.5\,(x+181.3) = y + 16{,}886.8$$

These equations give the value of 3,564.5 metric tons to x and 37,427.3 metric tons to y.[1]

These estimates are based on assumptions that are largely left implicit by the authors of the equations.[2]

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1. _Cambridge Economic History of Europe_, IV, p.459.

2. Braudel and Spooner seem to assume, for example, that the only advantage gold had over silver was in respect of weight (in terms of value); in other words, there could be no qualitative or intrinsic preference for gold over silver. So stated, this is, of course, dubious: Gold is more durable, less prone to wear and tear, less dependent on alloy for stability than silver. There must, therefore, be a minimum value in terms of silver below which, gold cannot fall, irrespective of the supply position of silver. But once the quantity of silver exceeds the ratio set by this minimum rate, the value of gold would probably accord with this ratio. In other words, the intrinsic preference for gold would be equally absorbed by the silver prices of gold set by variations in the relative availability of silver, so long as the supply of silver is large enough to set the prices above the minimum intrinsic value of gold in relation to silver.

One of these that is rather difficult to accept, at least without some refinement, is that the demand for gold and silver as currency metals was absolutely proportionate to the relative size of stock. The difficulty arises when we encounter economies where gold and silver have different uses. Suppose a country has a basic silver coin in which transactions ordinarily occur, while gold is used only for ornaments or for hoarding purposes. It is quite possible that the ratio of gold to silver supply in the country may not accord with the bimetallic ratio, because of the extra demand for silver for use as money. Let the gold stock be x, and the bimetallic ratio 1:10, the silver stock may not then be 10x, but 10x plus a minimum amount of silver needed for currency. This does not mean that 10x would consist of non-monetary stock only; what it means is that it could not include the entire currency in circulation. How large was the amount of silver so excluded cannot be fixed theoretically, since the minimum amount needed for circulation is so difficult to envisage. Furthermore, in the 16th-century world, some principalities had a basically silver currency, <u>or</u> gold currency, while others maintained a true (or modified) bimetallism; it would be almost impossible to say with any certainty how more gold <u>or</u> silver above the limit set by the bimetallic value ratio must, on the balance,

be added to our estimate of stock on account of currency needs. By and large, one would suppose that the quantity of silver should probably have been in excess of the limit of the value-ratio owing to the larger areas of the Old World where this metal, and not gold, was in use as the basic currency.[1]

Beyond these theoretical assumptions is the question of the quantities assumed or estimated by Braudel and Spooner. They hold that the bullion imported from the Americas was fully retained by Europe and was not dispersed, even partially, to the other parts of the world, which obtained what they needed from production within the Old World itself. Since whether Europe retained what it received from the Americas is the very point which is the subject of our enquiry, the assumption of an almost insignificant size of bullion flow from Europe to Asia during the 16th and 17th centuries cannot be readily conceded. It is on this account that Irfan Habib has restated the equation and obtained a fresh estimate of the stock for 1500 and 1650, but with the basic modification that the size of stock is held true for the entire Old World. Although he too continues with the assumption that gold and silver were

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1. The basic silver currencies in Europe are conveniently shown by Braudel and Spooner in Fig. 4 in Cambridge Economic History of Europe, IV, p.458.

valued exactly according to the relative sizes of their stocks, he has yet made certain alterations in the quantities of the equations. He has revised the bimetallic ratio for 1500, from 1:10.5 to 1:9.75, in order to allow for the lower silver prices of gold prevailing in the East. To take into account the gold production of Africa and Japan, he has raised the addition to gold, during the period 1500-1650, to 300 tons; at the same time, in order to cover the Old World silver production, he has put the total increase in silver supply between 1500 and 1650 at 21,500 tons. The equations now do not involve any particular assumption about the size of the bullion transfer from Europe to Asia; the values that result from the revised equations indicate a stock of 3,611 metric tons of gold and of 35,203 metric tons of silver in 1500 in the Old World as a whole.[1]

In considering these emendations to the Braudel-Spooner equations, one might remark that the latter seems to have fixed a rather excessively high figure for bullion stock in 1500 for Europe; the figures as revised by Irfan Habib for the entire Old World seem to be more plausible, keeping in mind the known later size of additions to the stock. If estimates of bullion stocks for individual countries were available, the

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1. Cambridge Economic History of India, Vol. I (in press).

issue may of course be more definitively settled. But in their absence, we may accept the revisions of the figures in the equations suggested by Irfan Habib to yield estimates for the Old World. But the revisions do not still remove doubts about the basic assumption that there was no additional demand for either metal for currency needs. We can, perhaps, meet this objection by (a) allowing a 20% deduction in silver stock relative to gold, (should gold have been the major currency metal of the Old World) to set one limit; and (b) allowing a 20% increase in silver stock (should silver have enjoyed that position), to set another limit. Proceeding under (a) and (b) we get the following high and low estimates for gold and silver stock in the Old World.

	Gold metric tons		Silver metric tons	
	(a)	(b)	(a)	(b)
Stock in 1500	4,742	2,807	36,988	32,841
,, ,, 1650	5,042	3,107	58,488	54,341

It will be seen that the size of the silver stock, under either calculation (a) or (b), is not very different from Irfan Habib's estimate; but the range for gold stock becomes extremely wide. Since it is almost certain that it was silver which was the major currency metal in the Old World,

it would appear that the true quantities should probably have been closer to the lower limits suggested by (b). We may, therefore, take it that the gold stock in the Old World grew from about 3,200 metric tons in 1500 to about 3,500 in 1650 and silver from about 33,500 metric tons in 1500 to about 55,000 in 1650.

As noted earlier (Chapter VIII), Akbar's treasure, at his death (1605) contained 10 mans (0.251 metric tons) of gold and 70 mans (1.757 tons) of silver;[1] that is, the ratio of gold to silver in the uncoined stock was 1:7, much higher, that is, than the value ratio of 1:9. However, Akbar's treasure hoard, largely consisted of coined money, namely, gold muhrs 69,70,000 in number (76.329 tons),[2] and silver rupees amounting, by one statement, to 7 crores (775.651 tons), and by another, to 10 crores (1,1080.073 tons).[3] But, as we

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1. 1 man = 55.32 lb avdp (Irfan Habib, Agrarian System, p.368).

2. Taking the weight of muhr to be 169 grains (Agrarian System, p.381 & n). An allowance of 4% is to be made for alloy content in a rupee; the weight of silver in a rupee then works out at approximately 171 grains (170.88 grains).

3. Pelsaert (Chronicle, p.33) gives the coin hoard of Akbar as 10 crores of rupees but Qazwini (Br. Mus. Add 20734, pp.444-5, Or 173 f.221a-b, however, tells us that Akbar's coin hoard amounted to 7 crores of rupees.

shall see, there was special demand for silver as the primary currency medium; and therefore in the form of the coined stock the quantity of silver should have exceeded that of gold well above the limit required by the gold-silver ratio.

In total (uncoined and coined bullion) the gold stock in the Imperial treasure hoard must have amounted to 76.580 metric tons; of silver, we must do with a range, viz. 777.403 to 1,109.83 tons. We have accepted the lower figure for silver as more reliable, coming as it does from an official source.

The gold and silver stock with the entire ruling class may be estimated with the help of these figures for the Imperial stock and the ratio we have determined, of the estimated annual savings of the Emperor, to those of the nobility and the cavalry. As shown in Chapter VIII, the Imperial stock was accumulated out of annual savings; that work out at 17,29,54,356 dāms in the 40th R.Y. The combined savings of the ruling class (consisting of the Emperor, the mansabdārs and the cavalrymen) as estimated in Chapters XI and XII, add up to 38,87,32,468 dāms for the same year. The Imperial Savings were thus in the ratio of 1:2.476 to the combined savings of the ruling class (including the Imperial cavalry).

Assuming that the stock of gold and silver hoarded by the ruling class bore the same ratio of 2.2476:1 to the stock with the Emperor, its size in 1605 may be set at 172.121 metric tons of gold and 1,747.302 metric tons of silver.

In addition to the coined and uncoined gold and silver, some stock of precious metals existed in the form of ornaments and other articles. In the Imperial treasure in 1605, there were gold ornaments, utensils and other gold-work worth 2,85,14,737 rupees.[1] Converting this value in rupees into the weight of gold, on the assumption that the cost of workmanship was 10% of the total, we get about 31 metric tons of gold. Now the estimated Imperial expenditure on ornaments etc. for the 40th R.Y. was 4,43,18,868 dāms;[2] the entire expenditure on this head by the Mughal ruling class may be estimated at (Imperial: 4,43,18,868; Nobles': 10,57,75,193 + Cavalrymen's: 3,95,92,614 =) 18,96,86,675 dāms. This suggests a ratio of the Imperial to the total expenditure by the ruling class on ornaments, etc. as 1:4.28; and applying this to the estimated size of gold in ornaments in the Imperial treasure,

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1. Pelsaert, Chronicle, p.33. The figures are discussed in detail in Chapter XI.

2. Vide Chapter XI.

we get 133 tons kept in the form of ornaments by the whole Mughal ruling class, raising the total gold stock with it to over 305 tons.

Besides this class, there were the zamīndārs, merchants and other higher classes who must have hoarded coined as well as uncoined gold and silver. The income of the zamīndārs has been estimated at 25% of the income of the ruling class.[1] But it is unlikely that their hoard of gold was proportionate to their income, since their class was far more numerous than the Mughal ruling class and included a very large number of persons with quite low incomes. Taking 30 metric tons for their stock of gold would not, perhaps, be too conservative. There is almost no index, even as rough as this, for the size of gold stock with the sarrāfs, goldsmiths and merchants; it may not be excessive to allow 20 metric tons as the total gold stock with these classes,[2] and perhaps a further 5 metric tons for ornaments etc. of all other classes put together, among whom are counted the cavalrymen who were paid by the mansabdārs through sub-assignments.

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1. Vide Chapter VII.

2. See Manrique, Travels, tr. C.E. Luard, II, p.156, for the vast sums of money piled up in the houses of merchants like "grain heaps". This may have included both gold and silver money.

Gold coinage in the Mughal Empire served essentially the interests of hoarding, and not as a medium of payment. Pelsaert noted that "very little trade is done with these gold coins seeing that most of them must come from the King's treasures and further the great men hoard them and search for them for their khazana (treasuries)".[1] At best only articles of very high cost fetched prices stated in gold: the Āīn quotes the prices of horses, superior qualities of cloth and precious stones in terms of gold muhrs.[2] Evidence for its use in other transactions is extremely rare. Abū'l Fazl says that 'land revenue' in sarkār Garh, comprising large parts of Central India, was paid in muhrs (gold coin) and elephants.[3] Gold also continued in use as currency in parts of Kashmir.[4] But such cases were exceptional. The English East India Company is not known to have ever received or made payments in gold coins. One may be certain, then, that gold currency was almost absent in ordinary commerce.

In the absence of any direct data on the size of gold currency in circulation we may assume that, at best, gold coinage

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1. Pelsaert, Remonstrantie, p.29.
2. Āīn, I, pp. 11-12; 105-111; 145.
3. Ibid., p.456.
4. Tuzuk-i Jahāngīrī, pp.296-27 (kishtwār).

in circulation consisted almost entirely of coins paid out by the Emperor and the nobles in partial purchase of precious stones, superior quality weapons, high quality cloth and horses.[1] In 1605, Akbar's treasure contained precious stones worth 6,05,20,521 rupees;[2] under our assumptions, as set out in Chapter VIII and IX, this implies an expenditure of 19,76,180 rupees (or equivalent) on this head by the Emperor in the 40th R.Y. Since the ratio between the expenditure by the Emperor and the Mughal ruling class as a whole on this head has been estimated by us at 1:4.28, we may say that 9,39,783 muhrs (= 84,58,050 rupees) were used for purchase of precious stones and jewels in the 40th R.Y. Converted into weight of gold the amount may be equated with 10.29 metric tons of gold. Keeping in mind the other specified spheres in which gold coins were used and the increase in the resources of the Empire and the corresponding increase in the expenditure on jewels and other costly commodities between 1595 and 1605 we may round off the total amount of gold coinage in circulation at 25 metric tons of gold. One cannot, of course, apologise enough for the roughness of this mode of estimation.

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1. Shaista Khan paid for precious stones in gold muhrs to Tavernier (Travels, II pp.72-73), though the transaction fell through owing to the higher rate for muhrs that Shaista Khan fixed.

2. Pelsaert, Chronicle, p.33.

We may now sum up our estimates under various heads under which gold stock existed in India in 1605.

Hoard (coined stock, uncoined bullion, ornaments):	Mughal ruling class	305 metric tons
Hoard:	<u>zamīndārs</u>	30 ,, ,,
Stock/Hoard:	<u>Sarrāfs</u>, merchants, goldsmiths	20 ,, ,,
Ornaments with other classes		5 ,, ,,
Coined gold in circulation		25 ,, ,,
Total		385 ,, ,,

Comparing this estimate with that of the estimated stock of the Old World we find that it amounts to about 12% of the Old World stock in 1500 and 11% of that in 1650.

This comparison shows that India could hardly have been the great repository of gold, which she is so often thought to have been: It must, however, be borne in mind that our estimate for 1605 is for the Mughal Empire only, though this, of course, must have contained the bulk of Indian stock of that metal.

Using a largely similar method, we may now try to estimate the silver stock in the Mughal Empire in 1605. We have already offered an estimate of the coined and uncoined silver hoarded by the Mughal ruling class (1,747 metric tons).

In addition to this, the Imperial treasure contained silver articles worth 22,25,838 rupees.[1] If we allow as much as 30% for the cost of workmanship,[2] there should have been 17.265 metric tons of silver contained in the silverware. Taking the ratio between the value of the ornaments in the Imperial stores and that of those possessed by the entire Mughal ruling class at 1:4.28, we get a figure of 74 tons. The total silver stock held with the Mughal ruling class should then have amounted to 1,821 tons.

Taking the silver hoard of the zamīndārs to be about 20% of that of the Mughal ruling class, on the assumption that though the zamīndārs' income was 25% of the latters' income, their ability to hoard was smaller, the silver hoarded by them may be put at 365 metric tons. (We have allowed a larger ratio of silver to income, than in the case of gold, for zamīndārs, because it is likely that as the average income was smaller, the proportion of silver to gold hoarded or held in ornaments increased). To include the silver stock held by merchants, sarrāfs, etc., we may round off the figure to 500 metric tons;

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1. Pelsaert, Chronicle, p.33.

2. I allow this percentage on the basis of Pelsaert's remarks in his Remonstrantie, p.27.

we may allow a further 250 tons to other class (including the cavalry troops of the jāgīrdārs holding sub-assignments), since silver is likely to have been the metal much more used for ornaments by the less wealthy and to some extent even by the upper peasantry.[1] The total in hoard and ornaments would then come, by an admittedly rough-and-ready mode of estimation, to 2,571 metric tons.

This figure must be supplemented by that of silver money in circulation. There are perhaps two possible means of forming an estimate of its quantity.

First, it appears from statements made by English factors that the maximum capacity of the Surat mint, in 1634, ranged from 5,000 to 9,000 rupees a day. Its actual daily output at one time in 1636 is stated to have been 6,000 rupees.[2] It would seem that during these years the output of the Surat mint was considerably above that of the average Mughal mints. This is shown by the fact that among the coins of the treasure

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1. But silver, let alone gold, could hardly ever have become a metal of ornaments for the ordinary villagers. When cloves were cheap during the late years of Akbar, they formed material for the necklaces of village women and children (Pelsaert, Remonstrantie, tr., pp.24-25).

2. English Factories, 1634-36, pp.68 and 218. Malcolm gives the maximum capacity of the Central Indian mints during the early years of the 19th century as 10,000 coins a day (Memoirs of Central India, xxxx London, 1824, p.85).

troves in U.P. (to be described presently) the Surat mint accounts for 40 out of 213 coins bearing mint names (only three are mint-less), that survive from the four years AD 1633-37. A ratio of 1:5.4, is thus obtained for the Surat coins to the total whereas the ratio of the Surat mint to the total average number of mints functioning each year over the period was 1:10.25. Quite obviously, the Surat mint produced far more coins than the average Mughal mint. Indeed, some mints were kept closed intermittently: it was reported in 1647 that at Thatta rupees were "stampt" onlt once a week.[1] Such a statement is not made for the Surat mint, which seems to have been open daily. We can, then, compute the annual mint output at Surat at Rs.6000 x 365,[2] and multiplying it by $\frac{5.4}{10.25}$, obtain the annual output of an average Mughal mint, viz. 11,55,317 rupees per annum. It is a legitimate assumption that conditions of mint organization and production under Akbar (as well as Aurangzeb) were not greatly different from those of the early years of Shahjahan's reign; and we can, therefore, hold the above average mint output to apply to the whole period of the Mughal Empire.

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1. English Factories 1646-50, p.101 (11 Feb., 1947).
2. It may be more accurate to take 355 to suit the Hijra year, but the difference is perhaps too marginal for us to worry about, especially since in Akbar's later years, and the whole of Jahāngīr's reign, we compute by solar years.

From this basic estimate we can perhaps go on to construct an estimate of the total amount of coined stock if we can find out how long, on average, a coin remained in circulation or hoard, before being brought back for reminting.

Hawkins who was in India, 1609-12, says that "Once in twentie years it (the rupee coin) commeth into the king's power".[1] It may possibly be taken to mean that, by common contemporary belief, a coin came back for reminting every twenty years, or, putting it differently, a coin on an average remained in circulation for 20 years.[2] This, however, seems too short a period for a coin to remain in circulation before being sent back for reminting; especially, when according to Tavernier, it was normal to make payment through coins which were 15 or 20 years or even more old.[3]

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1. Early Travels, ed. W. Foster, London, 1921, p.112.

2. Irfan Habib has however taken it mean that each coin reached the Imperial khālisa treasury once in 20 years through payment of land-revenue and taxes. Accepting Hawkins' figure of 12.5 millions for the income of the khālisa, he calculated the amount of money in circulation in the early years of Jahāngīr's reign as 250 million rupees (Contributions to Indian Economic History, I, ed. T. Raychaudhri, Calcutta, 1960, pp.1-2). The basic inference seems implausible.

3. Tavernier, Vol. I, p.29.

The minting and seigniorage charge in case of the silver rupee was 5.6;[1] and the peculiar Mughal-Indian custom of reducing the value of the coin on account of the mere passage of time may give us some clue as to the span during which a coin enjoyed premium over bullion. Tavernier says that 1/2 per cent of the value of the coin was lost within 3 to 4 years. Aziza Hasan has accordingly calculated the life of a coin at between 33 and 44 years.[2] But it must be remembered that a coin which wore off through use and so lost in weight, could still remain in circulation for a while as long as it was exchangeable for its bullion value. Furthermore since a considerably large number of coins was kept out of circulation for long durations by being hoarded, the rate of wearing off would have been much less than 1/2 per cent in 3 to 4 years. We may, therefore, take 44 years, the longest period during which a coin could lose its premium over bullion, as the average life of a coin. The real average life might have been longer than this; but is not likely to have been shorter.

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1. I. Habib, 'The Currency System of the Mughal Empire', Medieval India Quarterly, Vol. IV, Nos.1-2, p.3.

2. A. Hasan in IESHR, VI (1), p.99.

If we now know the actual number of mints that remained active during the last 44 years of Akbar's reign (1561-1605), we should be able to form an estimate of the total amount of uttered money in 1605. Abul Fazl gives the total number of rupee mints as fourteen;[1] but this list applies only to the year 1595-96. Certain mints, like those of Jaunpur, Narnaul, Dogaun and Ajmer, appear to have been quite active, to judge by the number of surviving coins issued from them, during the years prior to 1595-6. Since these were closed down some time before 1595-6, they are not included in the Āīn's list. On the other hand, a number of mints opened after the 40th R.Y. and these are naturally excluded from the Āīn's list.

On the assumption that if a mint was active during a particular year, at least one coin belonging to that year must have survived in the existing catglogued coin-collections as well as the U.P. treasure troves, I have counted the number of mints actually uttering rupees during the period 1561-1605. Upon adding all these mints (each mint active in a year counting

1. Āīn, I, p.27.

as one), the total comes to 279.[1] Since a number of surviving coins do not bear the name of the mint, or the mint name is illegible (in our sample based on U.P. coin-finds, the number of such mintless coins is 420 out of a total of 1703, during the period 1562-1605), 279 should be taken as the minimum number. The minimum s number of uttered coins in 1605, should, therefore, be set at (11,55,317 x 279 =) 32,23,33,443 rupees or the equivalent of 3572 metric tons of silver. This being the total amount minted, it must have included the amount of silver money in circulation, as well as silver hoarded.in the form of coined stock.

Another device, which is essentially based on the estimate of the output of the Surat mint in 1634-36, can be used to produce a perhaps more defensible estimate of the total amount of silver minted by 1605. In this we take into account the numbers of surviving coins, instead of an assumed average

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1. The number of mints has been counted from the coins in (i) Catalogue of Coins in State Museum, Lucknow, by C.J. Browns and Supplementary Catalogue by C.R. Singhal. (ii) Catalogue of Coins in the Indian Museum Calcutta, by N. Wright and Supplement by S. Ahmad. (iii) Catalogue of Coins in the Government Museum, Lahore, by C.J. Rodgers. (iv) The Coins of the Mughal Emperors of Hindustan in the British Museum, by Lane-Pool. This has been supplemented by the coins recorded in the reports of coin-finds from U.P., 1884-1965 by A.K. Srivastav (printed but not yet released for publication).

output per mint. We have found, to begin with, that in the U.P. coin finds there were 40 coins of the Surat mint uttered during the four regnal years corresponding to 1634-37. Given an annual output of Rs.6000 x 365 for the Surat mint, we may take it that each surviving coin in the U.P. treasure troves represents 2,19,000 actual rupee coins minted. Assuming this ratio to apply to all coins, we can total up the coins of the selected period of 44 years (1561-1605) and obtain the total number of coins uttered during the period by simple multiplication. The number of surviving coins being 1703, the total comes to 37,29,57,000 Rupees for the entire amount of silver money minted.

This estimate is little higher than the estimate based on the mint output; but this is what one would have expected, since, as noted earlier, the latter estimate is of the minimum number, and thus offers the floor and not direct approximation.

Accepting Qazwīnī's figure of 7 crores for the number of rupees in the Imperial treasure in 1605, and taking the ratio of the Imperial hoard to the hoard of the entire Mughal ruling class as 1:2.476, the number of silver coins in the hoards of the entire Mughal ruling class in 1605 may be computed at 17,33,20,000. If the coined silver hoarded by the zamīndārs

was about 20% of this (as assumed for ornaments), a further 3,46,64,000 rupees should be added to this number. Taking the amount of silver rupees hoarded by all the remaining classes, including the merchants and the cavalry troopers holding sub-assignments on behalf of the mansabdārs, at around 2 crores, the total number of hoarded rupees in 1605 should have amounted to 22,79,84,000, i.e. to about 2,526 metric tons. If we deduct this hoard from the total minted stock, amounting to 37,29,57,000 rupees (by computation based on numbers of surviving coins), the net amount in circulation in 1605 would come to Rs.14,49,73,000 or the equivalent of 1,606 metric tons.

The total stock of silver in 1605, in India, would thus add up to 4177 metric tons. This estimate would imply a gold-silver stock ratio of 1:10.85. Comparing it with our own estimate of the old world silver stock,[1] we find Indian stock to amount to 7.9% of the Old World stock in 1605. The Mughal Empire's share of world silver in 1605 seems to have been even smaller than its share of gold either in 1500 or 1660.

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1. I have worked out the Old World silver stock for 1605 by accepting Irfan Habib's estimate for 1500 and adding to it the additions between 1500 and 1605 based on Hamilton's figures and making a proportionate allowance for the estimated production of silver in the Old World.

II

India did not produce any noticeable amount of silver herself;[1] and so practically the entire stock of silver in India in 1605, over and above the stock accumulated by 1500, must have been built up through imports during the course of the 16th century. One would expect that most of silver imported originated in Spanish America, and channelled through Europe. Unluckily, the bimetallic ratio for any year before 1583 is not known; it is not, therefore, possible to employ equations of the kind suggested by Braudel and Spooner in order to determine how much bullion flowed into the country. Moreover, even if we knew the bimetallic value ratio, it would not have formed a correct basis for working out the additions to the silver stock during the 16th century, since a large proportion of the silver reaching India could have been absorbed in the replacement of copper money by silver currency during the second half of that century. From the time that Sher Shah (1540-45) established a purely silver coinage based on the rupee, silver began to replace the billon (overwhelmingly

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1. It transpires from Akbarnāma, I, p.283, that the once famous silver mines of Panjshir in Afghanistan, were no longer worked by mid-16th century. (For early medieval descriptions of these mines, see G. Le Strange, Lands of the Eastern Caliphate, Cambridge, 1930, p.350).

copper) coinage; and by the 1590's the replacement seems to have been completed, to judge from money-prices quoted in sale deeds.[1]

There was thus created large additional demand for silver as a currency metal during the very period that silver influx from Europe must have begun in real earnest. This enhanced demand thus balancing enhanced supply might well be responsible for the stability in the silver value of gold that the last two decades of the 16th century exhibit; and it is, of course, quite possible that such stability might have been witnessed by earlier decades as well.

The other possible reason for the stability in the bimetallic ratio could have been that the influx of gold was keeping pace with the influx of silver into India. According to an estimate offered by Chaunu,Portugal during the 16th century, acquired spices from Asia "almost without merchandise, in return", but paying 150 tons of gold, seized from Africa, and an amount of silver far less than the 6,000 tons nominally equivalent to the remaining value of imported spices.[2] These

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1. See Irfan Habib, 'Aspects of Agrarian Relations and Economy in a region of U.P. during the 16th century', IESHR, IV, No.3, Sept. 1967, pp.205-32.

2. Cf. I. Wallerstein, The Modern World-System, New York, 1974, p.329 & n., where references to Chaunu's work and conclusions are to be found.

figures suggest, at the maximum, a ratio of 1:40 between the gold and silver entering Asia through Europe. This proportion of gold in the total bullion influx is rather high, seeing that the total addition to Old World gold stock during the 16th century has been estimated at 300 tons as against an increase of 21,500 tons in the silver stock during the same period (thereby implying as low a ratio as 1:71.67). It is noteworthy, however, that the silver value of gold did not also rise substantially in Europe during the 16th century.[1]

Once silver coinage had completed the task of replacement of the billon currency, and the previously uncoined stock had been converted into coined stock, any further addition to coinage must essentially have come from imported silver. Since the Mughal Empire had a free or open system of coinage, it is to be assumed that bullion or foreign silver coins imported were rapidly melted down and minted as rupees. Variations in silver currency output must then logically provide us with a fairly accurate index of the relative size of silver imported annually.

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1. The Cambridge Economic History of Europe, IV, p.458, Fig. 4.

Basing herself on this assumption, Aziza Hasan devised an ingenious means of measuring currency output (and hence the silver influx) by counting the surviving silver coins by aid of all published museum catalogues.[1] Mughal coins of the period in question are of uniformly pure bullion, and with some well-known exceptions, of standard weight (Aurangzeb's increase of the weight of the silver rupee from 178 to 180 grains is too trifling to affect calculations). Thus they are easily comparable. Since they bear the name of the mint as well as the year of issue, it is possible to assign them to definite years. Hasan therefore made a pains-taking classification of the catalogued Mughal coins on the basis of mints and years. She then argued that the variations in the number of surviving coins of different years, which appear from such quantification, represent the fluctuations in total currency output. The curve showing the number of preserved coins relating to various years, could thus be taken as the curve of the currency output of the Mughal Empire, though on an "unknown scale". In order to establish geographical comparability over time, Hasan confined her count to North Indian mints.

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1. Aziza Hasan, 'Silver Currency output of the Mughal Empire and prices in India during the 16th-17th centuries', IESHR, Vol. VI, No.1, March, 1969, pp.85-116. See also her paper, 'Mints of the Mughal Empire', Proceedings of the Indian History Congress, Patiala Session, 1967, pp.314-33.

Hasan's effort must be recognised as a pioneering one; but there was a possible bias in her evidence, which has been pointed out by Deyell.[1] He urges that since there is always an element of selectivity in the coins retained by museums, which do not aim at retaining more than a pair of the same type (same mint/date/legend), the years in which coins of more varied styles were minted tend to be more heavily represented; he tries to show that these provide an adequate explanation of the great fluctuations displayed by Aziza Hasan's currency output histogram.

Even on the plane of theoretical arguments, Deyell's critique is overstated in that most individual museum collections often lack coins of particular mints in some years (though such coins <u>are</u> represented in other collections and, therefore, were minted), while in other cases particular mints in particular years are practically fully represented in all collections.[2]

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1. John S. Deyell, 'Numismatic Methodology in the estimation of Mughal Currency Output', <u>IESHR</u>, Vol. XIII, No.3, July-Sept., 1976, pp.375-392. Aziza Hasan was earlier criticised by Om Prakash and J. Krishnamurthy, but they made no fundamental criticism of her method, and their objections, such as they were, were met by an effective reply by A. Hasan herself in the same issue of the <u>IESHR</u>, VII (1), pp.139-60.

2. In Deyell's own Table 2, which he seems to regard as conclusive in favour of his criticism of A. Hasan, the range of numbers of coins per type is as wide as 1.60 to 3.00.

Clearly, fluctuations in output must be responsible for such variability in representation.

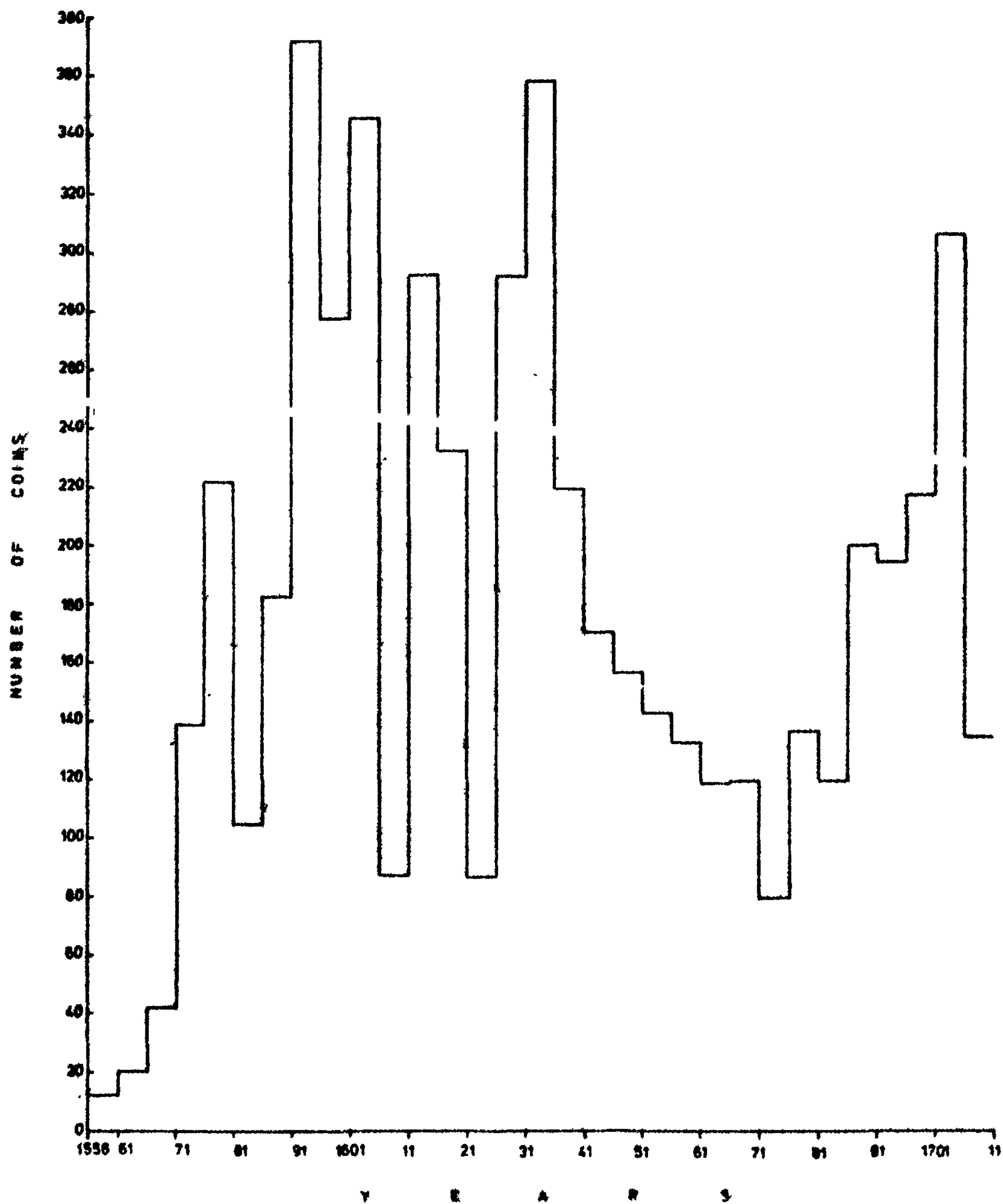
In any case, Deyell's principal objection can be met by an elementary check: Let us set aside the catalogued collections and go to the records of the coin-finds where no element of selectivity is possibly involved. It is well-known that the Lucknow Museum has perhaps the richest collection of Mughal coins in the world, and this derives from the large number of coins found in the treasure-troves in U.P.[1] I, therefore, abstracted the information for all treasure troves found in U.P. during the period 1880-1968, from the unpublished official reports.[2] The result is that I have been able to classify 5,521.5 rupees coins of the reigns of the Mughal Emperors from Akbar to Aurangzeb. I have then constructed a 5-yearly histogram from this sample on the same lines as the one adopted by Aziza Hasan (Fig. I).

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1. Deyell himself refers to the U.P. treasure troves as providing the material from which the Lucknow Museum made its collections on a selective basis; he cites a personal letter from Dr A.K. Srivastava, Numismatic Officer of the Museum to this effect (IESHR, XIII (3), pp.395-96).

2. For details of the reports see A.K. Srivastava, Coin-Finds from U.P. (printed but yet to be released) I have worked from the original reports in the State Museum, Lucknow, since Srivastava does not, unfortunately, record the number of duplicates in each find.

MUGHAL RUPEES
(NORTH INDIAN MINTS)
QUINQUENNIAL HISTOGRAM
Based on Coin-finds in U.P.



Ch XV

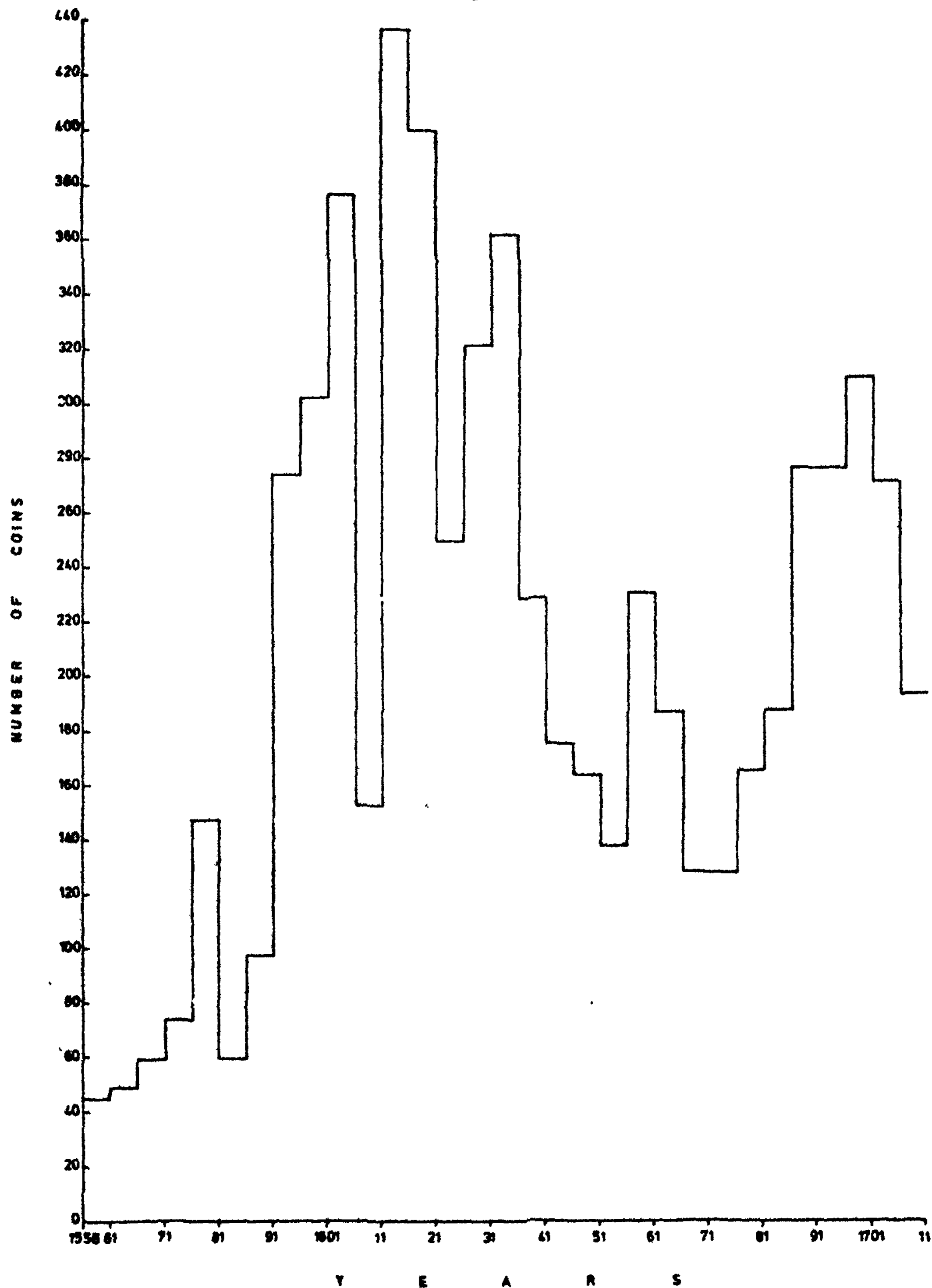
Fig 1

MUGHAL RUPEES

(NORTH INDIAN MINTS)

QUINQUENNIAL HISTOGRAM

Based on Catalogued Coins (Aziza Hasan)



A comparison of this histogram, based on a completely unbiased sample with Aziza Hasan's histogram (redrawn Fig. II) vindicates the general applicability of her method. There appear only minor differences in the trends in certain quinquennial periods (viz., 1591-95 and 1596-1600; 1651-1655 and 1656-60; 1676-80 and 1681-86; and 1696-1700 and 1701-05) but the substantial rise from 1585-90, the fall during 1606-1610, and the second rise from 1611, which have been attributed by Deyell merely to changes in the number of coin-types, are equally present in the treasure troves, in spite of the fact that the composition of these coins could not possibly have been influenced by the modern collector's preferences.

While Aziza Hasan's basic work thus remains largel, unimpeached and Deyell's critique must be taken as heavily overstated, I have decided to make my own calculations on the basis of the U.P. treasure-trove reports, for the reason, first, that no bias in selection can possibly be urged against their use; and, secondly, because I can attempt some further calculations on its basis, which is not possible with Aziza Hasan's evidence, since I do not naturally have access to her notes on her own detailed count. It may be observed that my own sample is also of a respectable size, namely, 5,522 coins against 7,067 coins counted and classified by Aziza Hasan.

The evidence of the surviving rupee coins from the latter half of the 16th century enables us to reconstruct movements in the silver money supply. We must remember that Akbar's Empire was expanding, and it was only by the decade 1576-85 that the bulk of Northern India came under his control. Thus we should normally have expected the number of coins stamped with his name to increase in correspondence to the extension of the limits of his Empire. This is indeed corroborated by the Index column in Table I which is based on the U.P. treasure-trove coins. Secondly, in so far as the silver currency was newly re-established, and progressively replacing the billon coinage hitherto used, a large amount of silver stock in the country so far uncoined, would have been minted in the initial decades, with a rapid tapering off in the later decades. This too is well illustrated by column 'C', which gives the proportion of total coinage uttered by the central or inland mints. The relative fall in the proportion accounted for by them is not entirely explained by the annexation of other areas. This is especially true of the decline of their share in total coinage from 38.1% in 1586-95 to 19.1 in 1596-1605. Obviously by the last decade, the coining of internal silver had been practically completed.

Table I

	G	NW	B	C	Index
1556-1565	0	8.3	0	91.7	10
1566-1575	20.3	8.1	0	71.6	55
1576-1585	26.7	3.9	0	69.4	100
1586-1595	53.6	8.3	0	38.1	149
1596-1605	59.9	19.2	1.8	19.1	190
1606-1615	16.27	35.96	6.82	40.5	117

The table also shows that the bulk of the silver influx was channelled through Gujarat after its annexation (1573) right down to 1605. Column 'G' represents the output of the Ahmadabad mint (the Surat and Cambay mints being established later). During two decades (1586-95 and 1596-1605) the Ahmadabad mint supplies as many coins as all other mints put together. The North-western (NW) mints (Lahore, Multan, Thatta, Kabul and Qandhar)[1] come next. The high proportions in the column 'NW' during the decades 1596-1605 and 1605-15 almost certainly indicate a heavy influx of silver through the Middle East entering India by the overland route; this during 1606-15, compensates for the fall in imports through Gujarat, which

1. I have not included the Kashmir mint in the NW column, since it was not on the main over-land trade route; and its coins were not directly affected by silver imports.

received silver by sea, across the Arabian Sea from the Middle East as well as around the Cape of Good Hope.

It is now generally accepted that the Red Sea route had continued to dominate Indo-European trade in the 16th century in spite of Portuguese interference. After an initial set-back during the early decade of the 16th century; it had revived almost fully afterwards.[1] Even pepper continued to reach Europe through the Levant.[2] The pre-eminent position of Gujarat in the minting of silver is fully consistent with this conclusion, since Gujaratk could well have received its silver from the Red Sea and Persian Gulf. The importance of NW mints, on the other hand, offers a more positive corroboration.

Bengal appears unimportant as a recipient of imported bullion in Akbar's time, but acquires some significance during 1606-15.

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1. Frederic C. Lane, 'The Mediterranean Spice Trade: Further evidence of its revival in the 16th century', Crisis and Change in the Venetian Economy, ed. Brian Pullan, London, 1968, pp.4758.

2. Jan Kieniewicz, 'Portuguese Factory and trade in pepper', IESHR, Vol. VI, No.1, March, 1969, pp.61-84, see especially Table II.

While we cannot thus say anything definite about the size of the silver influx during the latter half of the 16th-century, we can with some assurance establish the varying importance of the channels through which bullion was received in India.

Our coin-evidence can give us better quantitative results for the 17th century. Aziza Hasan has drawn a currency - in -circulation curve by taking the cumulative totals for each year, after making a deduction of 2% from the previous total at each stage to make allowance for reminting. She is here open to some criticism. For one thing, her curve is not actually one of 'currency-in-circulation' but of 'coined stock', given the basis on which she has constructed it. This is because her curve represents coins minted, and thus must include those which were in circulation as well as those which went to form the coined silver hoards. One must remember that Akbar's treasure included vast hoard of <u>coined</u> silver (in Rupees) with almost insignificant amount in bullion.[1] However, this is a matter of interpretation; and even if her curve is accepted as that of coined stock, it should remain of great value. But there are some necessary alterations which must still be made in following her method.

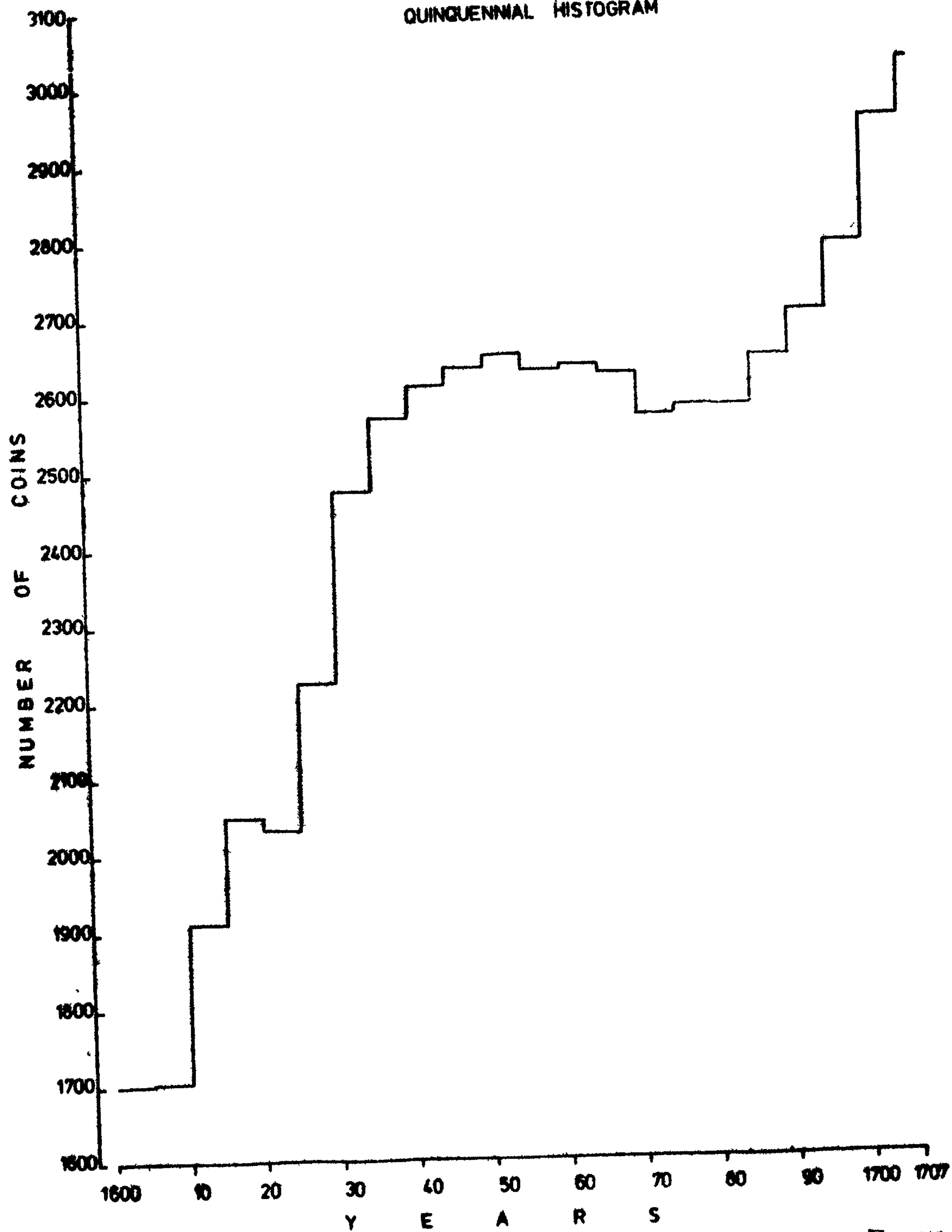
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1. See Section I of this Chapter.

The allowance of 2⅜% per annum that Aziza Hasan has made for reminting appears excessive, when we bear in mind the size of the coined money hoard. Moreover, the nature of our evidence does not seem to warrant analysis of annual changes. Taking a longer period of, say, 5 years should perhaps give us more dependable trends.

I have, therefore, drawn a 5-yearly histogram beginning with 1605. My initial stock for this histogram is 1703; this is formed by the total number of surviving coins in my sample for the period 1561-1605. The reasons for accepting this figure have already been adduced in Section I of this Chapter. I do not allow for reminting here, because it is unlikely that any significant proportion of rupee coins were reminted during this period, since they then formed a relatively young species of currency (rupees of pure silver). Such remintage as there actually was may be adjusted against the exclusion of the rupee-coins of the Sur dynasty (1540-56) and Akbar's coins before 1561.

After 1605, I have formed five yearly cumulative totals, but made a reduction of 1 per cent per annum (5% for each 5-year period at the simple rate), to allow for reminting. (See Fig. 3). The reduction of 1% is not justifiable on the basis of any precise evidence of actual remintage; it has been


COINED SILVER STOCK
QUINQUENNIAL HISTOGRAM
NUMBER OF COINS
3100
3000
2900
2800
2700
2600
2500
2400
2300
2200
2100
2000
1900
1800
1700
1600
1600
10
20
30
40
50
60
70
80
90
1700
1707
YEARS

Ch XI

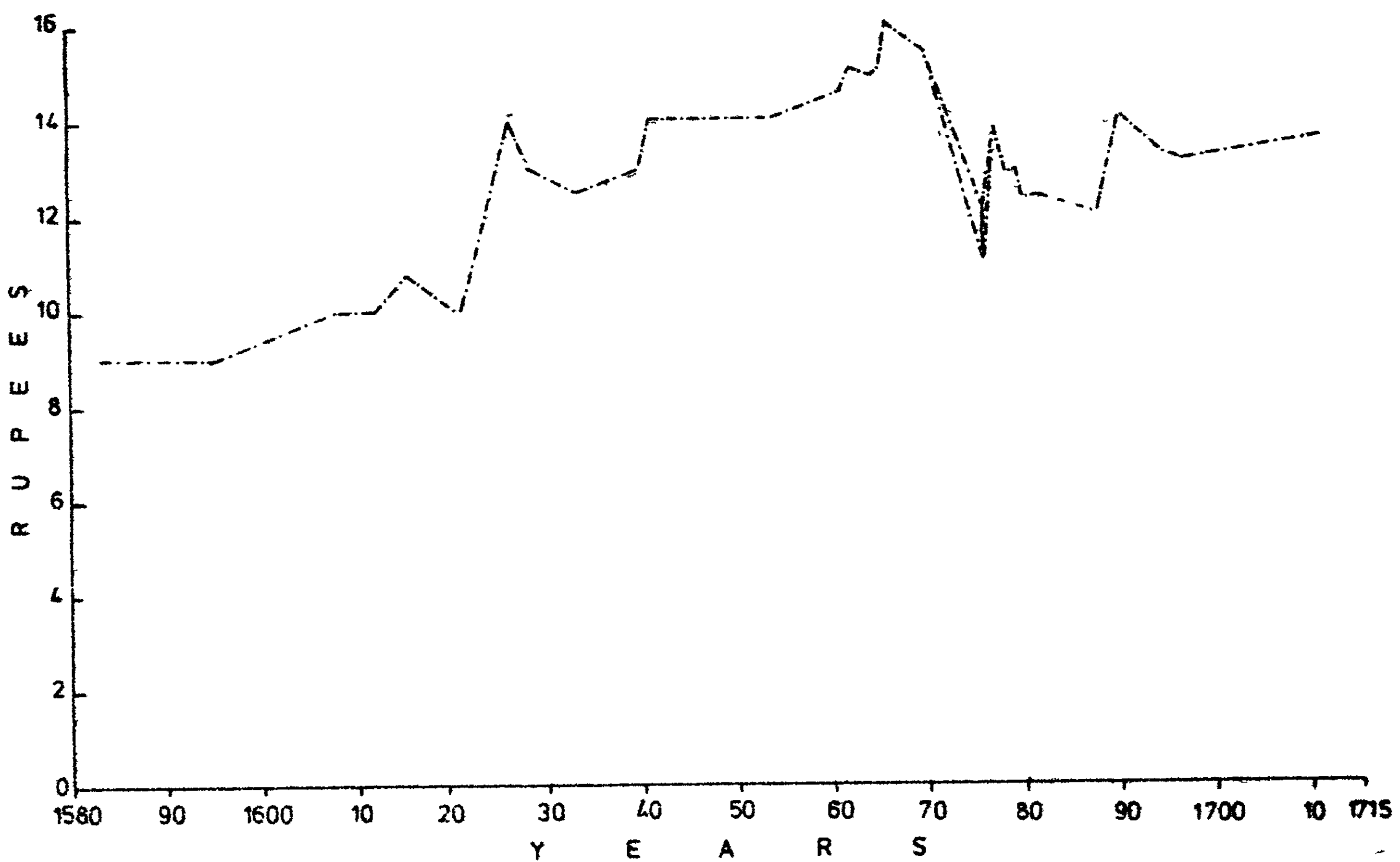
Fig IV

adopted simply because it seems a reasonably moderate rate.

Table II

1605	1703
1610	1706
1615	1913
1620	2050
1625	2035
1630	2226
1635	2475
1640	2569
1645	2612
1650	2638
1655	2649
1660	2630
1665	2637
1670	2625
1675	2574
1680	2582
1685	2573
1690	2645
1695	2708
1700	2791
1705	2958
1707	3034

It is apparent from the Table above as well as the histogram (Fig. 3) that the rise in coined silver stock is not


THE SILVER VALUE OF GOLD
RUPEES PER *MUHR*
RUPEES
16
14
12
10
8
6
4
2
0
1580
90
1600
10
20
30
40
50
60
70
80
90
1700
10
1715
YEARS

Ch XV

Fig IV

continuous. The coined stock increases up to 1616-20, but falls slightly in 1621-25. An ascent continued thereafter, but a long plateau is reached with 1641-45, that ends in a dip in 1671-75. From then on there is a slow but steady increase to the end (1707).

If we were to consider the impact of the trends in the growth of coined silver stock on the gold-silver value ratio, we may expect that a fall in the silver prices of gold might have occurred immediately after 1625 and then after 1675, when the fall in silver stock (probably caused in each case by a slackening in the inflow of silver) would have exerted its effect on gold prices. It is remarkable that this is precisely what is indicated by our evidence on the silver prices of gold. The curve of the rupee-rate for the gold *muhr* (Fig. 4) that we can build up from a fairly reliable list of quotations[1] shows that gold fell in terms of silver from Rs.14 per *muhr* in 1626 to Rs.12.50 in 1633. Thereafter it picked up again and the silver value of gold continued to appreciate till
XX&XXBARRINGXXXFEWXKMMEXMAXXGNSXXBMTXINXXXXXXTHEREXXXXXXXXXXX
1675, barring a few minor fluctuations; but in 1676 there

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1. These quotations have been conveniently assembled by Irfan Habib in a table giving the rupee value of muhrs (*Cambridge Economic History of India*, Vol. I). I have, however, disregarded the figure for 1658, based on rather tenuous testimony: Bhimsen's recollection of 1658 in 1708-9.

occurred a major crash, a fall from Rs.15.25 to Rs.11 per muhr. From here onwards gold slowly rose once again, to reach Rs.14 in 1690 and 14.50 to 15.50 by 1711.

This close correspondence between our estimate of the relative growth of the coined stock of silver and the trends indicated by quotations of rupee-values of the muhr should give us added confidence in the method adopted to use counts of the surviving Mughal coins for building up a coined stock curve.

The curve remains as yet on an undefined scale. It has been suggested (Section I of this Chapter) that the number of surviving coins can be converted into an absolute number of coins uttered on the basis of our information for the output of the Surat mint, on the one hand, and the ratio of Surat coins to all coins on the other, during the years 1634-36.[1] The increase in the number of rupee coins surviving from 1605 to 1660 (after allowing for remintage), in Table I amounts to 927. Converting this number into the presumed original absolute number, the increase in the coined stock during the period would be equivalent to 2,250 tons in weight. Assuming that this entire addition to coined silver stock was due to the bullion influx, the average annual influx would have been of the magnitude of about 41 tons.

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1. The assumption is that one coin in our sample represents 2,19,000 coins actually uttered (See Section I).

The increase in silver stock between 1605 and 1660 can also be estimated through a different device, on the basis of the change in the bimetallic ratio between 1605 and 1660. The value ratio between gold and silver in 1606 was 1:10; but by 1662 it had reached to 1:14.63 (Fig. IV). Since in 1605, when the value ratio was 1:10, the stock ratio was 1:10.85, a value ratio of 1:14.63 should imply a stock ratio of 1:15.87. We can then formulate a simple equation by making some further assumptions viz., (A) The additions in silver and gold stocks in India were in the same proportion to each other as those in the Old World stock during 1500-1660, namely, (21,500:30=) 71.667:1. (B) The stock of silver in 1605 was 4,177 tons and of gold, 385 tons (See Section I).

Now, let 'z' be the addition to Mughal Indian silver stock, 1605-60. Then -

$$4177 + z = 15.87 \left(385 + \frac{z}{71.667}\right)$$

$$\text{or} \quad z = 2{,}483$$

That is the increase in the silver stock was of about 2,483 metric tons, imply an annual average addition of 45.14 tons. It will be seen that this is fairly close to our estimate derived from the table of coined stock (Table I).

Though the direct information about the size of the bullion influx during the first half of the 17th century is very scanty, we may still try to use it to judge how far it fits with our two estimates.

The conduits of silver influx were chiefly the Levant (supporting the Red Sea, the Gulf and the overland trade) and the Cape of Good Hope (chiefly commerce of the English and Dutch East India Company).

Some estimates of the bullion exported to India by the English and the Dutch companies are forthcoming for the first half of the 17th century. According to figures given by Bal Krishna[1] and reproduced by K.N. Chaudhri,[2] the English East India Company exported during the first 23 years of the century treasure worth £ 753,336 or the equivalent of 76.84 metric tons of silver. The volume of the Dutch trade judging by its value was twice that of the English East India Company[3]

1. Commercial Relations between India and England, London, 1924, p.282.

2. The English East India Company, 1600-40, London, 1965, p.117. Though the figures are exactly the same, Chaudhri fails to make any reference to Bal Krishna here.

3. Bal Krishna, the ratio has been worked out by the help of the figures for Dutch trade stated in florin, p.289 and for the English on p.282.

during the first quarter of the 17th century. If the relative shares of bullion and goods, in the Dutch exports were the same as in those of the English East India Company, the Companies together should have exported over 230 metric tons of silver (10 tons per annum) to Asia, of which the Mughal Empire might well have attracted directly or indirectly a third or a half.

However, the imports of these two Companies in the early decades seem to have been only marginal in comparison to that by the overland trade through the North-western routes, if the size of output of the North-western mints[1] is any index of silver imports. The table below gives the regional break-down of the rupee coins in the U.P. treasure troves for a hundred years, 1606-1705.

Table III

	G	B	NW	C
1606-15	16.27	6.82	35.96	40.5
1616-25	7.81	12.50	54.69	25.00
1626-35	14.64	28.84	34.94	21.58
1636-45	20.34	12.15	48.31	19.25
1646-55	38.44	13.36	28.34	19.86
1656-65	31.30	14.12	37.02	17.56
1666-75	41.09	15.84	29.70	13.37
1676-85	42.21	9.02	16.39	32.38
1686-95	21.05	9.21	13.16	56.63
1696-1705	10.07	4.09	8.53	77.31

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1. The Kashmir (Srinagar) mint is again excluded, being away from the main channels of overland international trade. It is included under 'C' (Inland or Central mints).

The 'NW' (North western) mints dominate right down to 1665, whereafter 'G' (Gujarat) mints begin to outstrip them in output. But the Gujarat mints themselves coined not only silver imported through the European Companies but also the silver imported through the Red Sea and the Gulf which again from Europe came via the Levant and the Mediterranean. It would, therefore, not be unreasonable to assume that the total silver influx during the first three or four decades of the 17th century must have been many times the amount imported by the English and Dutch Companies.[1]

The dominance of the NW mints during the first half of the century that our Table III brings out is of considerable significance in considering the thesis put forward by Neils Steensgaard that the early decades of the 17th century saw a basic shift from the Middle East to the Cape of Good Hope as the main channel for European commerce with India and East Asia.[2]

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1. Sir John Woltenholme in 1921, estimated that the total annual drain from 'Christendom' to Asia then amounted to 150 English tons per annum (Cf. K.N. Chaudhri, The English East India Company 1600-1640, p.120). Even if we expect the Mughal Empire to have received as much as a third of this estimated influx to Asia, its silver imports during the first two and a half decades should have been about 50 tons per annum. Broadly speaking, this puts the annual influx in the same range as our two estimates.

2. Neils Steensgaard, The Asian Trade Revolution of the Seventeenth Century: The East India Companies & the Decline of the Caravan Trade, Chicago, 1974.

Surely, if the bulk of silver imported into India came through the Middle East, the two European Companies could hardly have replaced the 'pedlars' and the caravans.

Indeed, this is only reasonable, since both the Dutch and the English Companies throughout the first four to six decades of their existence lacked the capital to finance their imports from the East in large enough quantities for them to starve out the Red Sea, the Gulf and the overland commerce of India. Moreover, the English Civil War (1640-60) and Anglo-Dutch War (1652-1654) both took their toll of the two Companies' trade.

We have seen in our table that it is after 1665 that the pre-eminence of the North-western mints begins to disappear. During the succeeding period the Cape of Good Hope witnessed a much larger passage of treasure than had hitherto been recorded. According to the figures provided by Chaudhri, the English ~~and~~ East India Company exported £ 756,245, or the equivalent of 77 metric tons of silver, in the form of money to the whole of Asia during 1660-69. The amount increased to 239 metric tons during the following decade (1670-79), and 385 metric tons in the next nine years (1680-88), which yield the peak annual average of 42.6 tons. Hereafter there is a gap of 3 years in Chaudhri's statistics. But for the subsequent years of the 17th century,

1692-99, the imports of silver to Asia appears to have been about 168.7 metric tons only, giving an average of 21 metric tons per annum. The imports rose again at the beginning of the 18th century, amounting to 286.7 metric tons, or 35.8 tons per annum, during 1700-1707.[1]

The Dutch East India Compant probably exported a little more, since its volume of trade exceeded that of the English, though as far as commerce with the Mughal Empire was concerned, the difference in size of the trade of the two Companies was probably marginal.[2] The intrusion of the French Company and, still less, of the Danes, was not of much account.

We can, therefore, form a rough impression of the size of the bullion influx if we can determine what proportion of the English East India Company's silver exports to Asia was diverted to the Mughal Empire (Northern India only). This is luckily made possible by K.N. Chaudhri's indices of the total values of the Company's imports from Surat/Bombay and Bengal, from which we have to deduct the values (also indexed by him) of imports of black pepper and Mocha coffee, which though exported

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1. K.N. Chaudhri, The Trading World of Asia, op. cit., p.512, Table C.4.
2. Bal Krishna, Commercial Relations between India and England 1660-1757, pp.282, 289.

through Surat/Bombay came from areas outside the Mughal Empire (North India).[1] The ratio of the total costs of East India Company's purchases in the Empire to its total purchases in the East as worked out are given in the following Table.

Table IV

Years	Imports from Bombay %	Imports from Bengal %	Less: Imports of pepper (Malabar) %	Less: Imports of coffee (Malabar) %	Total Imports from the Mughal Empire %
1664	35.6	18.0	4.9	0.8	47.9
1665	39.8	15.0	7.8	0.5	46.5
1666	15.5	83.0	-	-	98.5
1667	89.2	0.2	7.3	2.1	80.0
1668	99.6	-	-	0.0	99.6
1669	36.9	13.7	5.3	1.2	44.1
1670	34.2	11.7	4.6	0.0	41.3
1671	48.0	17.6	6.6	-	59.0
1672	21.6	16.9	1.8	1.3	35.4
1673	36.7	28.8	5.5	1.4	58.6
1674	51.6	5.1	11.7	2.2	42.8
1675	21.6	17.6	3.2	0.4	35.0
1676	43.7	17.8	6.1	0.4	54.8
1677	30.0	16.0	4.7	1.1	40.2
1678	31.6	17.3	3.0	0.5	45.6
1679	25.1	22.7	0.1	0.9	46.8
1680	27.3	21.9	1.6	1.3	26.3
1681	27.5	25.0	3.4	1.0	48.1
1682	33.8	24.6	4.1	1.1	53.2
1683	36.2	21.0	3.4	1.4	42.4
1684	38.8	19.6	2.4	1.0	55.0
1685	31.4	36.3	4.3	1.9	61.5
1686	13.3	42.2	2.3	1.2	52.0
1687	25.3	21.6	4.4	0.9	41.6
1688	49.5	3.5	14.9	6.7	31.4
1689	10.3	3.7	3.2	-	10.8
1690	53.8	3.3	22.7	8.1	26.3

contd..

1. K.N. Chaudhri, The Trading World of Asia, op. cit., pp.510, 521, 524. There are certain gaps in the yearly series for imports of black pepper and coffee.

1691	23.1	45.3	16.9	0.0	51.5
1692	71.5	10.8	29.8	5.0	52.0
1693	48.5	31.0	7.8	0	7.7
1694	-	74.3	-	-	74.3
1695	0.8	97.5	-	-	98.3
1696	21.9	65.7	9.7	0.5	77.4
1697	14.8	53.2	11.5	3.8	52.7
1698	42.3	29.3	11.1	1.1	59.4
1699	24.0	42.6	5.9	1.9	58.8
1700	38.4	47.3	5.4	2.4	77.9
1701	17.9	41.9	3.0	1.1	55.7
1702	2.0	66.2	0.7	0.2	67.3
1703	33.0	26.0	9.4	0.1	47.2
1704	21.1	7.7	7.4	-	21.4
1705	2.7	32.3	1.1	0.7	33.2
1706	22.4	35.8	4.1	5.8	48.3
1707	6.0	55.0	3.5	0.9	56.6

It emerges from this table that between 40% and 50% of the total of the purchases by the English East India Compant for which it had to send out bullion to the East originated in the Mughal Empire (North India).

If we assume that the Dutch Company's export of bullion to the Mughal Empire was equal to that of the English, and also allow for a small amount of export of bullion by the French, we may put the silver influx by the Cape route at about 8 metric tons per annum during the 1660's, about 24 tons during the 1670s and over 40 tons during the 1680s. The scale of influx these figures suggest is rather heavier than indicated by our estimates for coined stock. Even if we allow that in the 1680s the silver imports through the Middle East had declined heavily (as indicated by the contributions of the North-western

mints after 1675), the estimate for the influx during the 1680s is greatly at variance with our estimates of coined stock which suggest bare addition of 16 metric tons per annum, between 1680 and 1690. The only explanation one can offer is that for reasons not clear much of the silver imported during these decades was not coined; or, alternatively, as is more likely, there was decline in actual remintage.

Our estimates of the coined stock (Table I, Fig. III) indicate that the actual increase in coined-silver occurred mostly during the first half of the 17th century. Between 1660 and 1700 the coined stock rose by only 6%. During the early years of the 18th century, it underwent an increase so that the total stock in 1707 stood 11.5% above the stock in 1660. The total increase in coined silver stock during the period 1661-1707 works out at 980.4 metric tons or about 21 tons per annum. It is certainly only half of the increase during the first half, or to be more precise during the period 1606 to 1660. Even if we take into account the higher estimates based on Chaudhri's figures for the English Company's bullion export in the second half of the 17th century, the volume of influx received during the first half was not exceeded even in the 1680s; and it was much less in other decades.

Aziza Hasan's currency-in-circulation (rect. coined stock) curve had suggested an increase in the silver stock of the

order of about three times, over the whole century. But the estimates I have offered show a much more moderate ascent over the period 1606-1707, one of 78% only.

The increase, even by our moderate estimate, should have affected prices considerably especially between 1606 and 1660, during which the coined stock rose by 54%. On the other hand, the impact on prices during the second half of the 17th century should not have been of much consequence. But one cannot assume that the price-level had risen by as much as the proportionate additions to silver stock, even if the velocity of the coinage remained constant. This is because the number of Transactions could not have remained the same, owing to variations in GNP. In so far as GNP equals average productivity per capita multiplied by population, possible changes in these two factors must be given consideration. It may be reasonable to assume that the average per-head productivity remained constant since no noticeable change in production technology is known to have occurred during the period. But the population could hardly have remained absolutely stable. In Chapter XVI, I have found the compound rate of growth of population to be 0.21% per annum by comparing the estimated size of population in 1601 with that of 1801. This suggests an increase in the population of about 20% in the course of the 17th century. If we then assume that the GNP and therefore, the Transactions, increased by this

proportion between 1605 and 1707, the effective increase (or, rather, the increase per capita) of coinage should have amounted to 62.4% only.

This moderate percentage of the <u>real</u> impact of bullion upon prices casts some doubt on the applicability of the theory of Price Revolution to Mughal India,[1] in so far at least as it may suggest inflation on a very high scale. As Braudel and Spooner point out, the 16th and 17th century price-changes in Europe were at two levels: in terms of bullion, and in terms of coinages which tended to be increasingly debased.[2] The total addition to silver stock in Europe in terms of the Braudel-Spooner equations was only of the order of 45%.[3] It is, of course, true that an enhancement of bullion stock may have a snowballing effect in certain circumstances, such as increase in velocity through use of commercial paper. But it is not established if this occurred at all in Mughal India.

The best thing for us would have been the ability to compare the relative quantities of additions to coined silver stock with prices of major commodities. Unluckily, the latter are not available in any proper series for goods of general

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1. Argued by Irfan Habib in <u>Agrarian System of Mughal India</u>, pp.392-94.
2. <u>Cambridge Economic History of Europe</u>, Vol. IV, p.
3. <u>Ibid</u>., p.445.

consumption. Occasional quotations, and these too from different places or different (or unknown) seasons, can hardly be of much use.[1] I suppose, therefore, that gold must remain the main index of the general-price-level, with copper as the second best. Very possibly, the increase in gold stock in India over the 17th century did not exceed 20%, the ratio by which population increased in the same period. We can, therefore, take it that the supply of gold per capita remained stable (or, possibly, declined), so that the silver-price of gold was essentially determined by the supply of silver. Thus the effect of the increase of silver supply was likely to be the most faithfully reflected in gold prices.

Finally, it is worth checking the estimated changes in coined stock with changes in the jamaʿ statistics. It is generally agreed that there was an element of fictitious inflation in the jamaʿ-dāmī since it was prepared for assignment of jāgīr in lieu of salary.[2] The enhancement of the jamaʿ should, therefore, have

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1. Such is the case with most prices discussed in Irfan Habib, op. cit., pp.81-89. The only exception is Bayana indigo (pp. 86-88); but this was an exceptional crop, with an international market. Sarkhej indigo does not show changes on a similar scale, even after Aziza Hasan's correction of Moreland (IESHR, Vol. IV, No.1, March 1969). I should like to stress that I am not questioning the fact of an ascent in prices, but only its scale.

2. Irfan Habib, Agrarian System, p.261; Athar Ali, Mughal Nobility under Aurangzeb, pp.75-76.

outstripped the increase in prices (say as was, at least, reflected in silver-prices of gold). Moreover, it should have also kept pace with increase in GNP, which, given a constant per-capita productivity, we have estimated at 20% over the whole of the 17th century.

In the Table below, therefore, we set side by side, in an indexed form, the figure for the size of coined stock (estimated), the silver price of gold and the jamá-dāmī.[1]

Table V

Years	Coined stock of Silver North India	Silver Price of Gold	Jamádāmī (excluding Dakhin provinces)
1605	100		100
1608-12		100	
1610	100		
1615	112	107	
1620	120		
1621		100	
1625	119		
1626		140	
1627			108
1628		127.5-130	
1630	131		
1633		125	
1628-36			112
1633-38			129
1635	145		
1640	151	130	

1. The index for coined stock is based on Table I, and the gold prices on quotations from Irfan Habib, Cambridge Economic History of India; and the jama index is a simple recalculation of Irfan Habib's own index for the Mughal Empire, excluding the Deccan provinces (Agrarian System, p.328), with the base year changed from 1595-6 to 1605.

1641-42		140	
1644-45	153	140	
1646-47			147
1650	155		
1653		140	
1655	156		
1656	154		153
1660			
1661		146	
1662		150-150.5	
1664		149-150	
1665	155	150	
1666		160	
1667			
1670	154	151-152	
1675	151	150	
1676		110-120	
1677		137.5-138.8	
1678		128-130	
1679		128.8	
1680	152	122.5-130	
1684		123.8-125	
1688		120	
1690	151	140	
1687-91		132.5	164.5
1695	156	131.3	
1687-95			151.8
1697			
1700	164		
1705	174		
1707	178		
1687-1709			154
1711		145-155	

The basic long-term trends displayed under the three columns are strikingly similar. By 1660 the increase in all the three columns amounts to about 50% over the level of 1605. All the three columns show a subsequent decline (not exactly synchronising), but a recovery much before the death of Aurangzeb. After 1667 the jamaʿ dāmī index remains much above the gold-price index, though as might be expected, it follows behind that of the coined silver stock.

This Table, in fact, meets a perceptible contradiction hitherto existing in the argument that revenue burden on the peasantry remained constantly heavy or increased in the course of the 17th century. Had the silver currency expanded as much as Aziza Hasan had supposed,[1] and the prices increased as much as Irfan Habib has represented in his table,[2] the jamá-dāmī should have actually declined heavily in real terms; and since, the jamá-dāmī tended to exceed the actual collection (hāsil), in the course of the 17th century, the actual burden should have lessened even further.

Our estimates, however, show that no such contradiction exists. Neither the silver stock nor the prices rose on the scale that has been suggested; consequently the jama' remained practically stable in real terms: no lightening of the fiscal pressure can accordingly be presumed.

Finally, our study may help put the influence of the influx of bullion received through the East India Companies (English and Dutch) in a proper perspective. The transfer of the treasure to India through the activities of the European trading companies after 1660 was on a fairly low scale compared

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1. IESHR, IV, op. cit., p.100.
2. Agrarian System, p.327.

to the coined silver stock already accumulated in India. The transfer, therefore, hardly justifies the immense effects attributed to it by K.N. Chaudhri in his study of the English East India Company's commerce from 1660-1760:

> "The economies of the two great empires of Asia (the Mughal Empire and China) greatly benefited from the expansion of economic relations with the West. The huge influx of bullion which resulted from the new demand was only one indication of the growth in s income and employment. The export of textile turned the coastal provinces of India into major industrial regions, and the bullion imported by the Companies passed into circulation as payments for export goods".[1]

It is surprising that Chaudhri should be able to pronounce the conversion of certain areas into "major industrial regions" without any information as to the relative volumes of agricultural and non-agricultural production of those areas; and to speak of immense benefits of bullion influx without any data on the existing stock of silver in India. When the latter defect at least, is remedied, there is found little to support Chaudhri's claim of the "great benefits" to Indian economy flowing from the activities of the commercial precursors of the later conquerors.

Om Prakash follows K.N. Chaudhri in asserting the same hypothesis: He arrives at the figure of the "export surplus" of Bengal at Rs.3.32 million annually for the period 1709-10 - 1717-18, and then speaks on its basis of an estimated increase in income of the order of 33.54 million rupees per annum.[2] This is

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1. K.N. Chaudhri, The Trading World of Asia and the English East India Company, 1660-1760, Cambridge, 1978.
2. IESHR, XIII (2), p.170.

not the place to consider in detail the nebulous theoretical basis of Om Prakash's method of obtaining the figure for income generated by the export surplus channelled through the Companies' trade, through a simple multiplication by ten; but surely his assumption that his figures of export surplus for a decade could apply to nearly a century cannot but arouse criticism.[1] As for our own evidence, the data of the relative output of the Bengal mints (Table III) lend no support to any suggestion that silver influx through Bengal ever attained a scale of this magnitude, even from the 1660s onwards when the Companies' commerce with Bengal began to develop substantially. Indeed, in relative terms the output of Bengal mints tended to fall, right down to 1707.[2]

If the total increase in the price-level owing to monetary phenomena, over the 17th century, was as moderate as we have suggested, viz. between 0.50 and 0.75% per annum, at the simple rate, there is little room for the supposition that the distance between prime costs and sale-prices was so enlarged as to yield abnormally high profits to merchants. In other words, it is not likely that merchant-capital was able to expand exceptionally, at the cost of raw-material producers and the artisans, simply by

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1. IESHR, XIII (2), p.178.
2. It must be said to his credit that Susil Chaudhuri gives expression to far more cautious conclusions with regard to the impact of the silver brought by the Companies in his Trade and Commercial Organisation in Bengal, 1650-1720, Calcutta, 1975, pp.207-10.

drawing benefits from inflation. The rate of monetary inflation was so low that it would have been largely concealed by the fluctuations in prices caused by harvests. Adjustments in prices and wages made for those variations would have easily absorbed the adjustments made necessary by monetary inflation. We may, therefore, close with the conclusion that there was no 'Hamilton factor' working to generate merchant capital in the economy of Mughal India, so far as we can judge from our evidence.

III

To end this chapter on a note of digression we may take up the question of interest-rates. The discussion on this theme has to be a digression, because the inter-connection between the money supply and interest rates is extremely complex. Factors such as insecurity, margin of profit, level of economic activity also affect interest rates to an enormous and often indeterminent extent. Ipso facto, therefore, it cannot be said that interest rates should have fallen (like prices that moved, of course, in an inverse direction) owing to increase in money supply. The detailed evidence has to be examined.

Unfortunately, the details are severely limited. There is in the Āin-i Akbarī no reference to interest rates on commercial loans. The Āin, however, gives data on amount due to be returned on principal when loans were given by the Emperor to the nobles (the loan being called musāa'dat).[1] The rates calculated per annum on the basis of compound interest, from the additions to principal given by Abūl Fazl work out as follows:[2]

Period	Annual Rate of Interest	Period	Annual Rate of Interest
1 year	6.25 %	6 year	7.00
2 ,,	6.10	7 ,,	8.30
3 ,,	7.70	8 ,,	7.20
4 ,,	10.70	9 ,,	6.40
5 ,,	8.40	10 ,,	7.40

Though it is probable that, to judge from Abūl Fazl's own language these rates were lower than those which the nobles could obtain from the professional usurers, it is not certain that they correspond to the current commercial rates offered

1. Āin, I, pp.196-7.

2. Cf. Irfan Habib, 'Usury in Medieval India', Comparative Studies in Society and History, Vol. VI, No.4, 1964, p.409.

to reputable merchants. For it is quite possible that money-lenders lent at higher rates to nobles than to merchants.

On these the principal evidence comes from the 17th century records of the East India Company. Unluckily, the Dutch records have not yet been adequately explored for this information.

The data collected by Irfan Habib from the English records[1] can be augmented. For Surat, for example, additional information is available for a number of years, 1626-39 and 1701-3. Similarly, besides stray data for Ahmadabad and Agra, additional information is forthcoming from the Deccan as well as Bengal and Orissa. All the supplementary information is given in appendix to this chapter.

The additional evidence does not, however, alter the broad result that emerges after incorporating this information remains the same as from Irfan Habib's original tables. At Surat, the interest rates on loans raised by the English East India Company or by reputable merchants fluctuated between 1 and 1½ % per month from 1624 to 1680, whereafter, there was a considerable fall: from 1651 on to 1703 the rates ranged between 1/2 to 5/8 % per month.[2]

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1. Irfan Habib, 'Usury in Medieval India', pp.402-4.
2. See also Irfan Habib, 'Potentialities of Capitalistic Development in Mughal Economy', Enquiry, Vol. III, No.3, pp.51-2.

At Ahmadabad a fall of the same magnitude seems to have occurred sometime between 1640 and 1647; and in Agra, during the course of 1647. The rates in both these towns otherwise corresponded with those at Surat.

In the Deccan, on the other hand, the interest rates were higher than in Gujarat and Agra. But as in the other three places a great fall in commercial interest-rates seems to have occurred between 1639 and 1642. Before 1642 the rates seem to have been always higher than 2 % whereas, after 1642 the rate seems to have varied between 1 and 1½ %; though in some years at Madras it fell lower and in the 1670's at Masulipattam it touched 2 %.

The rates in Bengal are unluckily not available for the first half of the 17th century and as our appendix shows, there is only one quotation from Bengal (or rather Balasore) for 1650. The subsequent quotations are much lower and a fall in the rates may be inferred for the 1650's for Bengal. But the Bengal rates continued to range between 1 and 1½ % and were thus, even after decline, substantially higher than those at Agra or in Gujarat.

The history of interest rates thus does not corroborate K.N. Chaudhuri's rather cursory judgment that "there was no long-term downward movement in interest rates in India".[1] In fact

1. K.N. Chaudhuri, The Trading World in Asia, & c., p.159.

there is an almost universal fall in the interest rates around the middle of the 17th century, and this calls for some explanation. Another matter calling for explanation is the regional variation in interest rates, borne upon us by substantially higher rates prevailing in the Deccan and Bengal, as compared to Gujarat and Agra.

The decline in the rates was not universal only in India, it seems to have been a phenomenon that occurred in Europe as well. Unluckily, the rate at which the English East India Company borrowed in England or Dutch East India Company in Holland have not been tabulated. But from the data collected by Sidney Homer it appears that in England there was a fall from about 10 % per annum in first quarter to less than 6 % in the last quarter of the 17th century.[1] In Holland not only were the rates lower than in England but a steady decline seems to have taken place in the first half of the 17th century reducing the rate from 8½ % to 4 %m, even taking it to below 4 % in the next half of the century after some temporary fluctuations owing to war.[2] This decline placed the interest rates, as Homer puts it, "well within the modern range".[3] It seems that though most

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1. Sidney Homer, A History of Interest Rates, New Brunswick, 1963, pp.125-7.

2. Ibid., pp.127-9.

3. Ibid., p.139.

prominently seen in England, a similar decline in rates occurred in France and other parts of Europe about the middle of the 17th century.

The reasons for the fall in interest rates at this time can, perhaps, be ascribed to the increase in money-supply owing to the influx of bullion, supplemented substantially by the concentration of money capital through the growth of deposit-banking, extensive use of commercial paper and profits from international trade. The result of the supplementary factors surely was that a larger and larger share of the bullion stock in Europe came under the control of mercantile and banking classes.

The question arises whether the fall in the interest rates in India at about the same time was not a consequence of the developments in Europe. Even after the great decline in the Indian rates during the 1640's the English Company's factors stated that the cost of credit in India was double that in England (1650); or that the rate being 7½ to 9 % per annum in Surat and only 4 % in England, it was even profitable to borrow in England and lend out in India. Indeed, in 1682, it was expressly claimed by the Court of Directors of the East India Company that by sending 'great stocks of money' to Surat they had forced down the interest rates prevailing there to 6 % per

annum (= ½ % per month).[1]

It is surely probable that the possibility of making usurious gains by simply transferring money-stock from Europe to India stuck others too, so that much silver intended to be employed in usury might have come from Europe through the Middle East along with the specie that was used to pay for Indian exports. If this happened in course of time, the supply of credit in India was bound to, expand, and cause ultimately a fall in its cost.

If this is the process which principally lay behind the behaviour of Indian interest rates, the difference between North India (Agra and Gujarat) and the Deccan may at least partly be explained. The chief currency metal in the Deccan and South India being gold (the basic coin for all price-quotations was the hun), money-supply in the Deccan was not likely to be as much affected by the silver influx as would have been the case in Northern India, not, that is, until after the Mughal annexations of Bijapur and Golkunda in 1686 and 1687. Gold supply would have become more abundant (relatively) only in so far as silver replaced gold as currency metal in the peripheral areas of the Deccan (bordering the Mughal Empire) or in some

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1. Susil Chaudhuri, Trade & Commercial Organisation in Bengal, p.117; K.N. Chaudhuri, op. cit., p.159.

of the parts. But any impact of this abundance on interest rates would have been far less potent than in the silver areas.

The prevalence of high rates of interest in Bengal is rather more difficult to explain. One possibility is that there was a steady drain of specie from Bengal as revenues from the khālisa lands and jāgīrs of nobles were sent up-country. If there was commerce of a sufficiently large volume, by which the monetary circuit was completed by a corresponding amount of purchases, no large amount of specie (in the net) need have actually been transported out from Bengal. This is what both Grant and Shore supposed happened during the first half of the 18th century when about a crore of Rupees were annually remitted by the nāzims of Bengal to Mughal Court.[1] However, if the net export of specie was still large enough to balance the continuous influx of silver into Bengal from Europe, the effect might have been to contain money-supply at a time when owing to the expansion of sericulture, there was larger and larger demand for Bengal silk in Europe as well as the Middle East, and the resultant

1. Fifth Report, p.321, line 6-10 (Grant). Shore in his Minute, agrees that the money must have come back by channels of trade; yet he cites Grant for the figure of Rs.8.12 crores as being sent out to Delhi within a period of 10½ years during Shujaüddin Khan's viceroyalty; some more might have been sent, he says, to meet bills at Delhi (Ibid., p.183, paragraphs 133 & 134). Apparently, he supposes the specie to have been transported back physically to pay for Bengal exports.

expansion in commerce necessarily placed heavier demands on local credit sources.[1] By the very nature of our evidence, there is a very great deal of speculation involved in all this; and the entire subject must await a larger exploration of the evidence than has hitherto been achieved, before a more confident answer to this, as well as other questions, can be returned.

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1. Susil Chaudhuri, op. cit., pp.114-25, discusses the problem posed by the limited (or expensive) supply of credit in Bengal to the English East India Company.

Appendix

Surat

Year	Monthly Rate of Interest	References
1626	1 ¼ %	Pelsaert, 41-42.
1630	1 1/8 %	Factories, 1630-33, 127.
1635	1 %	Factories, 1634-36, 114.
1639	1¼ to 1½ %	Factories, 1637-41, 116-17.
1701-1702	5/4	
1703	¾ %	Ibid.

The Deccan

Year	Place	Rate/ Month	References
1639	Masulipatam	3 %	Factories, 1637-41, 218.
1642	Golkunda	1½ %	Factories, 1642-45, 69.
1642	Rajapur	1-1/8%	Factories, 1646-50, 38.
1650	Karwar	2½ %	Factories, 1646-50, 341.
1660	Rajapur	1 %	Factories, 1655-60, 358.
1661	Madras	3/4 %	Factories, 1661-64, 40.
1663	Madras	5/6 %	Factories, 1661-64, 366.
1665	Madras	1 ½ %	Factories, 1661-64, 390.
1674-76	Masulipatam	2 %	Master, II, 100-01.
1676	Masulipatam	2 %	Master, I, 297.

Bengal and Orissa

1650	Balasore	3 %	Factories, 1646-50, 338.
1660	Hugli	1 ½ %	Factories, 1668-69, 171.
1670-72	Hugli	1-3/8%	Master, I, 427.
1679	Hugli	1 ½ %	Master, II, 264-65.
1679	Balasore	1½ & 1¾%	Wilson, Early Annals, I, 382-3.
1703	Calcutta	1 %	Early Annals, I, 231.
1706	Calcutta	1 %	Hamilton, II, 10.

Agra

1626		5/6 % to 1%	Pelsaert, 28-29.

P O P U L A T I O N

Chapter XVI

POPULATION

I

In spite of the variety of statistical information in the Āin-i Akbari, it offers no account or estimate of the number of people for the whole of Akbar's Empire or any portion of it. Abul Fazl himself tells us that in the 25th regnal year, the jāgirdārs, shiqdars and the daroghas were ordered to write the names and occupations of all inhabitants, village by village.[1] But the results of this census are not recorded; it may be presumed that either the order was not carried out or the data were incomplete; or, again, that Abul Fazl omitted to give us the results through oversight. As matters stand, the surviving records of the Mughal Empire, during its entire period, fail to offer us any large-scale census for any region; only returns of inhabitants (enumerated by caste) or of houses, for some towns, have survived.[2] These are supple-

1. Akbarnāma, III, pp.346-7.

2. For example those found in Nainsi, Marwar re Pargana ri Vigat, ed. by Narain Singh Bhati, Jodhpur, 1968; also his Khyat. The evidence is studied by B.L. Bhadani in IESHR, Vol. XVI, No.IV, 1979, pp.415-27.

mented by a few estimates by European travellers for some cities or general remarks made by contemporaries about the density of population in some regions.

In the absence of any enumerations, one can only resort to use of indirect information for forming an estimate of the country's population in or about 1600. Moreland was the pioneer in this field.[1] He tried to estimate the population of Northern India on the basis of the <u>ārāzī</u> (measured area) figures in the <u>Āīn-i Akbarī</u>, which he takes to represent the entire gross cropped area. Comparing the <u>ārāzī</u> with the gross-cultivation at the beginning of this century and assuming a constant correspondence between the extent of cultivation and size of population, he concluded that from 'Multan to Monghyr' there were 30 to 40 million people at the end of the 16th century.

For Deccan and Southern India, Moreland took as the basis of his calculation the military strength of the Vijayanagara Empire. Assuming a rather arbitrary ratio of 1:30 between the soldiers and the civilian population, he estimated the population of the region at 30 millions. Allowing for

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1. W.H. Moreland, <u>India at the Death of Akbar</u>, pp.16-22.

the territory lying within the pre-1947 limits of India but not covered by his two basic assumptions, he put the population of Akbar's Empire at 60 millions, and that of India at 100 millions.

These estimates received wide acceptance. Nevertheless Moreland's basic assumptions (and therefore his figures) seem quite vulnerable. For estimating the population of Northern India he follows two premises. He believes, first, that the ārāzī represents the entire gross-cropped area of that time, which leads to two further assumptions, viz., (a) that measurement was made out of the cultivated land only; and (b) that it had been carried to completion everywhere. His second major premise is that the extent of cultivation per capita remained the same in 1600 and c.1900.

These various assumptions, are open to serious objections. The ārāzī of the Āīn did not in fact represent the gross-cropped area, but was the area measured for revenue purposes, which included uncultivable waste in varying proportions. Moreover, measurement had by no means been completed everywhere.[1] The ārāzī figures, therefore, were not even an index of the extent of cultivation but give simply the extent of area under measurement.

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1. See Chapter II of this thesis.

In deducing the size of population from the extent of cultivation, Moreland implicitly ignores the size of the urban population. But even taking up his own simple assumptions, one would hesitate to agree with his view that the average size of the operational land holding did not vary over the period 1600 and 1900. Since a comparatively smaller area was under the plough in 1600, the cultivable waste must have been much larger. Therefore, the average holding should tend to have been of the optimum size (assuming that agricultural technology remained the same, and the peasants had about the same resources per head in terms of cattle, ploughs, etc. as in 1900). At the beginning of the 20th century due to the growth of the population, the pressure upon land was much greater; and the availability of virgin land much smaller. The average holding about 1900 should therefore have been distinctly smaller than in 1600.

With these weaknesses in his basic assumptions, Moreland's estimate of the population of Northern India loses much of its credibility. It is weaker still for the Deccan and Southern India. The army:civilian ratio is not only arbitrary but undependable; the comparison with the France and Germany of pre-World War I, seems, in particular, to be quite inept. These countries had organised large-scale mobilisation of

their resources; and this would surely have tended to lower the army:civilian ratio. On the other hand, the infantry of Vijayanagara, living on subsistence wage (unlike the modern army) might have needed only a small fraction of the labour of the total civilian population to supply its needs and weapons, and so a higher military-civilian ratio than in modern times was also possible.

It is curious too that Moreland has not adopted the same method of counting troops, to make an estimate of the population of Akbar's Empire. The Āīn-i Akbarī provides detailed figures for the number of zamīndārs' armed retainers, horse-men as well as foot. These total 4.66 millions.[1] For the year 1646-7, during Shahjahan's reign, we have Lahori's official estimate of the Imperial cavalry (1,85,000 cavalry, 8,000 mansabdārs; 7000 ahadīs ; total 200,000) and infantry (30,000).[2] If one were to apply the ratio of 1:30 to these figures, one would get 146 millions (not 60 millions) for the population of Akbar's Empire. The ratio of 1:30 that Moreland had assumed for South India thus negatives completely his estimate for Northern India.

1. Āīn, II, p.386.

2. Lahorī, II, p.715.

Furthermore, Moreland seems to have given an inadequate weightage to the areas outside the two regions whose population he has estimated. To make an appropriate allowance for these regions, Kingsley Davis raised Moreland's figure for the whole of India to 125 millions.[1] This modification does not still, of course, remove the more substantial objections to Moreland's method, which we have raised above.

Another significant attempt, by using different kinds of data, has been made by Ashok V. Desai.[2] This has required rather complex assumptions. Desai compares the purchasing power of the lowest urban wages, on the basis, first, of prices and wages given in the Āīn and then, of the all-India average prices and wages of the early 1960's. Shershāh's rai' provides him with a means of measuring the change in agricultural productivity. Assuming that the total food consumption in Akbar's time was 1/5th of that of 1960's and that cultivation was then concentrated in the areas with highest yields, he finds that the productivity per unit of area was 25 to 30 per cent higher in 1595 than in 1961. This in turn enables

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1. Kingsley Davis, Population of India & Pakistan, Princeton, 1951, p.24.

2. A.V. Desai, 'Population & Standard of Living in Akbar's Time', IESHR, Vol. IX, part I, 1972, pp.34-62.

him to estimate the productivity per worker in agriculture at twice as high in 1595 as in 1961.

Basing himself on the statistics of consumption in 1960's he attempts to extrapolate the level of consumption in 1595 and finds that the consumption level was somewhere between 1.4 and 1.8 times the modern level. He then reconstructs the pattern of consumption in the 16th century.

With these figures at hand and taking into account other relevant modern data, Desai works out the area under the various crops, per capita. Multiplying these with revenue rates (averages of rates of the last four years from the '*Āīn* of 19 years', for Delhi, Agra, Allahabad and Awadh), he computes the per capita land-revenue, at between 58.47 and 79.56 *dāms*. Dividing the total *jama'* of the Empire, given in the *Āīn* by the upper and lower limits, he gets the two limits for the population of the Empire, at 64.9 and 88.3 millions. Desai himself prefers the lower figure of 64.9 millions, confirming thereby Moreland's estimate of 60 millions for Akbar's Empire.

Some objections have been raised by Alan Heston against Desai's method,[1] as well as against some detailed assumptions involved

1. Alan W. Heston, 'The Standard of Living in Akbar's Time: A Comment', *IESHR*, Vol. XIV, No.3, pp.39-6.

in his application of it.[1] Heston's main objection is that the modern Indian Yields (based on the crop-cutting method) cannot be compared with the 16th century estimates of yields which were arrived at by inspection and were influenced by a desire to raise land-revenue. But such peremptory dismissal of comparisons of yields seems unjustified, since the estimates of yields down to 1893 were in any case arrived at by the same method of general estimation and for the same purpose as in Mughal times. Heston's objection cannot thus apply to yield estimates made in the 19th century and yet these do not diverge substantially from later estimates based on crop-cutting.[2] Heston's other objection is not to Desai's method; but to an error (Desai's as well as mine) in converting units of weight, which resulted in highly inflating the purchasing power of urban wages in Akbar's time.

There are also some other modifications in Desai's method which seem called for. Desai used modern all-India statistics, to compare with 16th century data . Since the

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1. Shireen Moosvi, 'Production, Consumption & Population in Akbar's Time', IESHR, Vol. X, No.2, 1973. In this paper I myself made some other assumptionswhich I should now like to withdraw, and some slips which need correction.

2. See Chapter III.

prices and wages in the Āin are those of the Imperial Camp and therefore, apply to Agra (and possibly to Lahore),[1] it is inappropriate to compare these with modern All-India averages. In the same way, the Āin's standard crop-rates (raiś) applied either to the immediate vicinity of Sher Shah's capital, Delhi, or at the most to the region where the dastūr-ul 'amals were in force, i.e. mainly Uttar Pradesh, Haryana and the Panjab. These are thus not comparable with average all-India yields. Moreover, Desai divided the total jama' of the Empire by the hypothetical land-tax per-capita, without making any distinction between the zabti provinces and other regions, where the tax incidence might have been much lower. Another assumption of his which requires correction is that the jama' was equal to total land-revenue, whereas it really was an estimate of the net income from tax-realization of the jāgirdārs and the khālisa.[2]

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1. See Chapter XIV.

2. See Chapter IV.

II

In spite of the legitimate objections to the estimates of Moreland and Desai, the statistics of area, yields, revenue rates and *jamá* in the *Āin-i Akbarī* still furnish us with a means of estimating the population in the 16th century. The methods suggested by Moreland and Desai too remain, in essence, valid, though they can be followed only with certain qualifications and refinements and with a revised set of assumptions based on the conclusions reached in our previous chapters (especially Chapters II, III, V, XIII and XIV).

As suggested by Moreland the relative extent of cultivation worked out from the *Āin* can serve as the basis for working out the population of the time. To translate the extent of cultivation into population, data on two other aspects are, however, essential: (a) The ratio of rural population to urban population in 1601;[1] and (b) the change in land under cultivation per head of agricultural population between 1601 and 1901.

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1. Since modern censuses in India are undertaken in the initial years of each decade (1901, 1911, 1921, and so on), it has been thought convenient to assign the estimate of population based on the *Āin's* information to the year 1601, rather than 1595 (the year in which the *Āin* was closed). When one is making a comparison across centuries, the shift of six years is hardly of any significance.

As for (a), we have already argued for a ratio of 15:85 as that of the urban to the rural population.

The operational holding in 1601, owing to the lower pressure on land and greater availability of virgin lands should have tended to be of the optimum size, though given the poverty and limited resources of the 17th century peasant, the 'optimum' must have had certain limits. As a rather arbitrary (but, perhaps, not unreasonable) inference, I could suggest that the average operational holding in India, c.1601, was about 10% higher than 1901. Since the yields as well as the over-all agricultural productivity in general remained unaltered,[1] the larger area of cultivated land per head of agricultural population should have implied a higher consumption level. The real wages worked out from the <u>Āīn</u> do appear to reflect such a higher consumption level: To judge from the <u>Āīn</u>'s data, the urban real wages in 1601 should have been about 35% higher than what they were in the 19th century.[2] But the general consumption might not have been higher by this percentage. For one thing, the rural real wages in 1601 might even have been especially depressed, since the rural economy suffered from a tremendous drain in the form of extraction of land-revenue flowing away to the towns. If we then assume that (a) urban consumption per capita in 1601 was 35% higher than in 1901, but that (b) rural consumption per capita

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1. See Chapter III.

2. See Chapter XIV.

was of the same size in 1601 as in 1901, and given (c) the urban population at 15% of total, we get a lower limit of 5% for the margin by which general consumption was higher in 1601 over that in 1901. Translated into cultivated land per head of the agricultural population in 1601 we would get 106% as the lower limit. On the other hand, the higher limit would be 140%, if we assume that the ratio of urban to rural consumption has remained unaltered down the centuries. But since there is strong reason to believe that the relative urban level of consumption was much higher than the rural in Mughal India (compared to the ratio in 1901), the actual margin by which general consumption was higher in 1601 than in 1901 should have been much nearer to 5% than 35%. This supports our inference that the average operational holding was 10% larger in 1595, since this would imply (with urban population at 15% of the total), a general consumption level equal to 108.5% of that of 1901.

With these inferences at hand one can estimate the population if one can establish the relative extent of cultivation in the closing years of the 16th century. Our own analysis and calculations in Chapter II suggest that the total cultivation in the area covered by U.P., Panjab, Haryana, Multan and Gujarat was between 50 and 55% of what it was in the

opening decade of the present century. It would be reasonable to assume that the extent of cultivation in the three regions was broadly representative of the extent of cultivation in the whole of India. It is helpful to remember in this context that the regions comprised areas of full as well as backward cultivation: Hardly any extension in cultivation has taken place in the Doab during the intervening period, since it was already almost fully cultivated, while in Multan due to the introduction of canal irrigation cultivated area has gone up by about three times during the intervening centuries.[1]

The population for 1601 may now, therefore, be worked out on the basis of the relative extent of cultivation. For the sake of convenience the main assumptions are restated below:

(i) The total cultivation in 1601 was 50 to 55 per cent of what it was during the first decade of the present century.

(ii) The ratio of urban population to rural was 15:85 in 1601.

(iii) The average agricultural holdings in 1601 were 10% larger than in 1901.

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1. See Chapter II.

The following symbols are to be used:

A = Area under cultivation

P = population

a = cultivated area per head of agricultural population

Subscript 0 refers to 1601 and 1 to 1901. Superscript r stands for rural, and u for urban:

Now

$$\text{If } A_1 \propto P_1^r$$

$$\text{and } a_o = 1.1\ a_1$$

Therefore

$$A_o \propto 0.11\ P_o^r$$

$$0.5\ A_1 \leq A_o \leq 0.55\ A_1 \qquad \text{(assumption I)}$$

$$\text{or} \quad 0.5\ P_1^r \leq 0.11\ P_o^r \leq 0.55\ P_1 \qquad (1)$$

$$\left.\begin{aligned} P_1 &= 28{,}38{,}70{,}000 \\ P_1^u &= 0.102\ P_1 \end{aligned}\right\} \quad \text{(K. Davis, p.24)}$$

$$\text{or} \quad P_1^r = 0.8989\ P_1$$

$$= 25{,}49{,}15{,}260$$

Substituting P_1^r in equation (1)

$$12{,}74{,}54{,}750 \leq 0.11\ P_o^r \leq 14{,}02{,}03{,}393$$

$$\text{or} \quad 11{,}58{,}70{,}520 \leq P_o^r \leq 12{,}74{,}54{,}750$$

But $P_o^r = 0.85 P_o$ (assumption II)

Therefore,

$$13,63,18,310 \leq P_o \leq 14,99,50,153$$

The population of India in 1601, should accordingly have been between 136 and 149.9 millions.

One can also make another estimate by following Desai's method, though in a modified form. We can, that is to say, proceed from gross land-revenue. For this, we must work out the incidence of land-revenue per capita at that time. To do so, we should continue with some of the assumptions already adopted, and use a few of the conclusions reached in our previous chapters. The basic relevant assumptions are as follows:

(i) The yields remained the same between 1601 and 1892 (Chapter III)

(ii) The per-capita land under different crops was 8.5% higher in 1601 than in 1892, since the operational holding per head of agricultural population was 10% larger while the ratio of the urban population to the rural was 15:85.

(iii) The pattern of consumption of food and so the relative distribution of land among major food crops has remained largely the same. The increase in cloth consumption between 1601 and 1892 being met almost entirely by imported English textiles and yarn, the proportion of the total cultivated area under cotton per head in 1601 and 1892 was also the same.

With these assumptions (some quite different from those of Desai), Desai's method for obtaining an estimate of per capita land revenue can be greatly simplified. The per-capita area under different crops in 1601 can now be calculated by simply drawing upon figures of the area of each crop per head in 1892. Assuming that the results obtained for certain districts of U.P. can be applied to the whole of Northern India, the area of each crop per head of population in 1892 can be worked out by dividing the area under different crops in these districts by their total population as counted at the 1891 Census.[1] Raising it by 8.5% we get the area per head of population under these crops in 1601.

Multiplying the per head area under different crops with the *dasturs* (cash-rates per *bigha*) and adding them all we

1. Census of India, Vol. I, p.6.

get the total per capita land-revenue in 1601. The rates here are the averages of rates for all circles in Agra, Delhi, Allahabad, Awadh and Lahore, given in the Āīn-i dehsāla. It is these (and not any of the 19-year rates used by Desai) that were in force at the time to which the Āīn-i Akbarī's jamaʿ figures relate.[1]

Table I

Crops A	Area/capita B	Dastūr C	Land-revenue D = BxC
wheat	0.413 bīgha-i Ilahī	62.7 dāms	25.895 dāms
barley	0.196 ,,	41.1 ,,	8.056 ,,
juar	0.202 ,,	36.6 ,,	7.393 ,,
bajra	0.145 ,,	27.9 ,,	4.046 ,,
gram	0.197 ,,	38.0 ,,	7.486 ,,
rice	0.099 ,,	49.9 ,,	4.940 ,,
other foodgrains & pulses	0.250 ,,	36.0 ,,	9.000 ,,
oil seeds	0.012 ,,	36.3 ,,	0.436 ,,,
spices	0.009 ,,	63.5 ,,	0.572 ,,
sugarcane	0.107 ,,	140.4 ,,	15.023 ,,
cotton	0.161 ,,	89.7 ,,,	14.442 ,,
other crops	0.002 ,,	100.00 ,,	0.200 ,,
			97.487

1. Chapter I.

The per-capita land revenue therefore comes to 97.487 dāms. On dividing the gross land-revenue by this figure we should get the population in 1601. The total land-revenue is, however, not to be taken as identical with the naqdī or jama' figures of the Āīn. The jama' recorded in the Āīn's 'Account of the 12 ṣubas' is not the total land-revenue assessed on the basis of dastūr-rates, but the expected net income of the jāgīrdār. Making allowances for all expenses of collection (20%) and the share of other claimants (20% for zamīndārs[1] and 7% for local potentates), and assuming further that 10% of the jama' came from taxes other than land-revenue,[2] the jama' given in the Āīn should be increased by 69.81% to get the gross land-revenue based on the dastūrs (see Chapter V).

As we have already marked in passing the per capita land-revenue in regions where the ẓabt system (with its dastūrs) did not prevail might not have been the same as in the ẓabt provinces.[3] It will, therefore, not be proper to divide

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1. See Chapter VII.
2. See Chapter IV.
3. Were we to assume that the per capita revenue rates were the same in both the parts of the Empire, the ratio of jama' should approximately be the same as the ratio of population of these provinces to the total population of the Empire. The total jama' of these provinces was 212 crore dāms and the total jama' of the Empire subtracting half of Kabul (for area beyond the Durand Line) was 512 crores. This gives a ratio of 100:41.406. The ratio of population of the total

contd.....

the entire gross land-revenue of the Empire by the per capita land-revenue obtained for the *zabt* provinces. Nevertheless, we can estimate the population for the five provinces, (viz., Agra, Delhi, Lahore, Allahabad and Awadh). The total *jama'* of these provinces was 212 crores.[1] Increasing it by 69.81% we get the gross land-revenue: 359.997 crore *dāms*. On dividing this figure by the per capita land-revenue (97.487 *dāms*) the population of these provinces comes to 3.693 crores.

Now, supposing that the ratio of population of these provinces to that of the Empire and the whole of India has remained constant since 1601, and taking the ratios worked out from the 1891 census,[2] we get the figure of 9.89 crores for the Empire and 14.55 crores for whole of India.

Thus from two different methods we obtain two sets of estimates of the population in 1601:

(continued from previous page)

to that of the *zabt* provinces in 1891 was 100:36.23. Such a ~~da~~ difference in the two ratios can be either because the per capita revenue rates were different, or because of shifts in population. Since a movement of population on this scale since Akbar's time cannot lightly be assumed, we are left only with the former alternative.

1. The figure is based on the *pargana* totals.

2. *Imperial Gazetteer*, Vol. I, p.491, Table III.

(a) Based on cultivated area: 13.63 crores to 14.99 crores
(b) Based on Land-Revenue: 14.55 crores.

The second estimate falls within the range set by the first. One should therefore not be far wrong in assigning a population of about 14.5 crores in 1601 to the territories of Pre-Partition India.

Taking the population of India to be around 145 millions in 1601, and 255 millions in 1871 - this being the total counted by the first Census of 1872 (as modified by Kingsley Davis to allow for fuller territorial coverage), the compound annual rate of growth of the country's population for the period 1601 to 1871 works out at 0.21% per annum. Adopting this rate and given the two population-figures for 1601 and 1871, one gets for 1801 a population of some 210 millions. This offers a welcome corroboration of our estimates, since the recent estimates for 1801 based on different arguments and calculations range from 198 millions to 210 millions.[1]

1. Morris D. Morris, 'The Population of All-India, 1800-1951', IESHR, Vol. XI, Nos.2-3, p.311, the population estimate for 1801 here is 198,153,000; Irfan Habib, 'A Note on Population' (cyclostyled), 200 millions; D.B. Bhattacharya, A Guide to population estimates of India (cyclostyled), 210 millions.

The rate of growth during the last three decades of the 19th century (1871-1901) was 0.37% per annum - a rate higher, but not substantially higher, than the one deduced for the long period of 1601-1871.

An annual rate of growth of 0.21% suggests some interesting inferences about Mughal Indian economy. Population growth has been usually regarded as an index of efficiency of pre-capitalist economies. Upon this test, the Mughal economy could not be deemed absolutely static or stagnant if the population tended to grow by nearly a half in two hundred years. Davis, on the basis of arguments that have now been heavily criticised,[1] believed in a stable population of 125 millions continuing for practically the two hundred years from 1601 to 1801, thus yielding a zero rate of growth. The rate of 0.21%, on the contrary, suggests an economy in which there was some room for 'national saving' and net increase in food production, although the growth on the balance, was slow. The slowness must have come from natural calamities like famines, as well as man-made factors (of which the heavy revenue demand could not but have been one). If one had data for estimating

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1. Irfan Habib, 'Colonialization of Indian Economy, 1757-1900', Social Scientist, No.32, March, 1975, pp.34-5.

populations for some intermediate points, such as for the years 1650 and 1700, one could perhaps have worked out rates of population growth for shorter periods, and obtain a closer view of the efficiency of Mughal economy within those periods. But, unluckily, at the moment the data on which such estimates for the whole country could be based lie undiscovered - if, indeed, they exist at all.

B I B L I O G R A P H Y

BIBLIOGRAPHY

The Bibliography is confined to listing documents, books, and articles actually cited in the thesis. Much material that has been explored but was found to produce little of relevance for our study has, therefore, been excluded.

Section A is devoted to sources, including coin-catalogues and find reports (which may be deemed to present numismatic evidence in the raw), is arranged subject-wise; within each sub-section a rough chronological order has been followed, based on date of original preparation or publication. Whenever British Museum (now British Library) or India Office Library (now Commonwealth Relations Library) MSS are listed, it is to be assumed that the Department of History (A.M.U.) Library possesses rotograph/xerox copies or microfilm of the MSS. The few cases where this is not so are expressly indicated. The reader is invited to consulte Chapter I for a discussion of the Āīn-i Akbarī, and other contemporaneous sources of statistical information.

Section B includes in sub-section A works containing the statistical information on modern conditions, like gazetteers, surveys, maps, etc., and in B books and articles concerned with historical matters of relevance to our theme. The entries are arranged in strict alphabetical order.

Titles of journals, proceedings of conferences etc. are abbreviated according to the general list of abbreviations given at the beginning of the thesis.

A. SOURCES

I. STATISTICAL AND ADMINISTRATIVE WORKS

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2. Abūl Fazl, Āīn-i Akbarī, ed. Blochmann, Bibliotheca Indica, Calcutta, 1867-77. MSS: British Museum. Add. 6552 & 7652 (Microfilms in the Department of History, A.M.U.). Translation by Blochmann, revised and edited by Phillott, Vol. I, Calcutta, 1927 and 1939; and that of S. Jarrett, revised by J. Sarkar, Vols. II & III, Calcutta, 1949. All references to the Āīn are to Blochmann's edition of the Persian text, unless otherwise stated. See Chapter I for criticism of the Blochmann edition, and my use of the MSS. for re-establishing the text of the work as well as its statistics.

3. Yusuf Mirak, Mazhar-i Shāhjahānī, completed 1634, Vol. II published under title Tarikh-i Mazhar-i Shahjahani, ed. Sayyid Husamuddin Rashidi, Sindi Adabi Board, Hyderabad.

4. Anonymous, Dastūr-ul ʿAmal-i ʿAlamgīrī, c.1659, Br. Mus. Add 6598.

5. Munhta Nainsi, Marwār ra Pargana rī Vigat (c.1666), ed. N.S. Bhati, 2 vols., Jodhpur, 1968 & 1969. An extremely rich collection of village-wise statistics of Marwar under Jaswant Singh (Rajasthani).

6. Munhta Nainsi, Khyāt, ed. Badri Prasad Sakarya, 4 Vols. (Vol. IV contains the index), Jodhpur, 1960, 1962, 1964, 1967). This collection of miscellaneous historical and statistical information in Rajasthani was made some time after 1667.

7. Anonymous, Dastūr-l ʿAmal. Aurangzeb: Post 1691. Bodl. Fraser 86.

8. Munshi Nand Ram Kayastha Srivastavya, Siyāqnāma (A.D.1694-6), lithographed, Nawal Kishore, Lucknow, 1879.

9. Anonymous, Khulāsatu-s Siyāq (c.1700). Br. Mus. Add. 6588. I have collated this MS with Br. Mus. Or. 2026.

10. Rai Chaturman Saksena, Chahār Gulshan (completed, 1759-60, but statistics relating chiefly to c.1720). I have collated the following four Maulana Azad Library MSS to obtain the correct text and statistics: Abdus Salam Coll. 292/62; Jawahar Mus. Coll. 81 jim, fe; Abu Muhammad, 69 Farsiya; and University Coll., Farsiya 78.

The geographical (and statistical) portion was translated by Jadunath Sarkar in his India of Aurangzeb, Calcutta, 1901. But his figures were not derived from very good MSS.

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12. Bāyazīd Bayāt, Tazkira-Humāyūn-o-Akbar, ed. M. Hidayat Hosain, Bib. Ind., Calcutta, 1941.

13. Nizāmuddīn Ahmad, Tabaqat-i Akbarī (1593), ed. B. De, (Vol. III partly edited & revised by M. Hidayat Hosain), 3 Vols., Bibliotheca Indica, Calcutta, 1913-35.

14. Abdul Qadir Badauni, Muntakhabu-t Tawārīkh, (c.1595-6), 3 Vols., ed., Ali Ahmad and Lees, Bib. Ind., Calcutta, 1864-69.

15. Abul Fazl, Akbarnāma, ed. Ahmad Ali, 3 vols., RAS, Calcutta, 1873-87. Translation by Beveridge, 3 vols., Bib. Ind., Calcutta, 1897-1921. All references are to Persian text unless otherwise stated. A variant (earlier) version with valuable additions (e.g. original text of an important memorandum by Todar Mal) is contained in Br. Mus. Add. 27,247. Wherever I have used this version of the Akbarnāma, this MS has been specifically cited.

16. Abul Qasim Firishta, Tarīkh-i Firishta, (original title: Gulshan-i Ibrāhīmī), Nawal Kishore, Kanpur 1874 & 1884; Lucknow, 1905. Pages of all these printings correspond.

17. Jahangir, Tuzuk-i Jahāngīrī, ed. S. Ahmad, Ghazipur and Aligarh, 1863-64.

18. Mutamad Khān, Iqbālnāma-i Jahāngīrī, (all 3 Vols.), Nawal Kishore, Lucknow, 1870. I have checked the printed text with Br. Mus. Or. 1768 (transcribed in the 17th century, but incomplete) and Or. 1834 (18th century). Or. 1834 adds a statistical conclusion to Vol. II, which is not found in the lithographed text or (apparently) any of the other MSS.

19. Amīn Qazwīnī, Bādshāhnāma, Br. Mus. MS. Add 20734, and transcript of MS Raza Library, Rampur, in Department of History, Aligarh.

20. Abdul Hamid Lahori, Bādshāhnāma, Bib. Ind., Calcutta, 1866-72.

21. Mohammed Wāris, Bādshāhnāma (formerly, Vol. III, of Lahori's work), transcript of Raza Library,(Rampur) MS in the Library of the Department of History Library, AMU. Since this is defective, I have also used notes of certain passages from Br. Mus. MSS Add.6556 and Or. 1675 made by Professor Irfan Habib.

22. Sujān Rai Bhandārī, Khulāsatu-t Tawārīkh, 1695, ed. Zafar Hasan, Delhi, 1918.

23. ʿAlī Muhammad Khān, Mirʾāt-i Ahmadī (1761), ed. Nawab Ali, 2 Vols. & Supplement, Baroda, 1927-8 and 1930.

24. Mir Ghulām ʿAlī Āzād Husainī Bilgrami, Khizāna-i Amira (1761), Nawal Kishor, Kanpur, 1871.

III. OTHER WORKS IN PERSIAN

25. Jalāluddīn Thānesarī, Risāla dar Juwaz-i (bai-i) ārāzī, MS. in Maulana Azad Library, Shaifta Collection, Arabic: Fiqh 24/26. This interesting tract, written exclusively from the point of view of revenue-grantees, has been edited and translated into Urdu by Said Ashraf Nadvi under the title, Tahaqquq-i Ārāzi-i Hind, Karachi, 1963. The author died in January 1582 (Abdul Haqq, Akhbāru'l Akhyār, Delhi, A.H. 1322, p.338).

26. Abūl Fazl, Letters: Two collections

(a) Inshā-i Abūl Fazl, collected by Abdus Samad, lithographed, Nawal Kishor, Kanpur, 1872. Recognised as authentic.

(b) Ruqqāt-i Abūl Fazl, Lithographed, ed., printed in the Alawī Press of Alī Bakhsh Khan (place not stated), A.H. 1270. The genuineness of this collection is open to some doubt (See discussion in Chapter IX).

27. Amin Ahmad Razi, Haft Iqlīm, Vol. I, ed. Ross, Bib. Ind., Calcutta, 1918.

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IV. DOCUMENTS

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32. Documents in the Central Record Office, Allahabad. The documents used by me are those accessioned in the first x series (accessioned till 31 March 1958). These include an original copy of Akbar's farman ordering consolidation of madad-i ma'ash grants in villages reserved for them, dated 7 Rabiʻ II, A.H. 986 (13 June 1578); its accession number is 24.

All documents in this collection are cited as Allahabad Documents, with accession nos. immediately following. The First Series is to be assumed.

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35. Taksim (taqsim) documents in Rajasthani, Rajasthan State Archives, Bikaner, entitled Taksim pandrahsala pargano Antelo Bhabhro sarkar Alwar subo Akbarabad Sambat 1706-20. I have used a microfilm copy of these documents by courtesy of Dr S.P. Gupta.

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(b) Arhsattho pargano Malarna Sarkar Garh Ranthambhor Sambat 1747.

(c) Arhsattho pargano Amber Sambat 1747 (Seal, A.H. 1098).

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42. The English Factories in India & c. 1618- 9, ed. W. Foster, 13 Vols. Oxford, 1906-27. Individual Vols. are indicated by years covered, and are so cited.

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45. Francisco Pelsaert, 'Chronicle', tr. Brij Narain and S.R. Sharma, A Contemporary Dutch Chronicle of Mughal India, Calcutta, 1957. There is strong reason to believe that this is a free translation of an unidentified Persian chronicle.

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48. F.S. Manrique, Travels of Fray Sebastian Manrique, 1629-1643, tr. C.E. Luard, Hakluyt Society, London, 1927.

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VI. COIN-CATALOGUES

58. Mughal Coins in U.P. Treasure Troves:

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66. A.K. Srivastava, Coin-Finds from U.P. (printed, but yet to be published). I was kindly allowed by the author to use some material from this book.

B. MODERN WORKS

I. STATISTICAL INFORMATION GAZETTEERS, SURVEYS, MAPS

The following list includes works containing information on modern conditions, which I have used essentially for comparative purposes.

67. *Agricultural Statistics of India,* initially issued by the Department of Revenue and Agriculture, Government of India, Annual volumes since 1884-85 (Calcutta/Delhi).

68. Edwin T. Atkinson, *Statistical, Descriptive and Historical Account of the North-Western Provinces,* Each district portion separately paginated within volumes devoted to particular divisions. Some volumes such as XIV (Benares Divison) issued under other editorship. Allahabad, 1875-94.

69. *Fifth Report From The Select Committee On The Affairs Of The East India Company With An Appendix and Glossary To The Report,* 1812-13; Irish University Press Series of British Parliamentary Papers, Colonies: East India 3, Shannon, Ireland, 19[illegible].

This volume is an offset reprint of the original *Fifth Report* and so must supersede all other editions of that celebrated work for reference purposes.

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71. *Census of India* (1911), Calcutta, 1913. Besides the main volume of the Census giving all-India figures, various provincial volumes of the 1911 Census were consulted. This series of Census vols. conveniently gives figures for the four Censuses of 1872, 1881, 1891, and 1901 besides those of the 1911 Census.

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74. H.F. Evans, *Final Report of the Settlement of Farrukhabad District,* Allahabad, 1875.

75. Gazetteer of the Bombay Presidency, ed. James M. Campbell & others, dist. vols., Bombay, 1874-84.

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79. D. Ibbetson, Panjab Castes, Lahore, 1916.

80. Imperial Gazetteer of India, Government of India, Oxford, 1910.

81. Prices & Wages (1861-95). Government of India, Calcutta, 1895. The prices and wages are quoted for district headquarters on the basis of monthly averages; coverage varied considerably over time.

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85. John Augustus Voelcker, Report on the Improvement of Indian Agriculture, London, 1893.

86. G. Watt, Commercial Products of India, London, 1908.

87. G. Watt, The Dictionary of Economic Products of India, 6 vols. (Vol. VI in 4 parts), London, 1889-93.

88. Zafaru-r Rahman, Istilahat-i Peshawaran, (Urdu), 7 vols., Delhi, 1940 & c.

II. BOOKS AND ARTICLES

The works included here are chiefly those concerned with history of Mughal India or of other parts of the world during the 16th and 17th century, including the history of contemporary international commerce.

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90. R.A. Alavi, 'New Light on Mughal Cavalry', Medieval India - A Miscellany, Vol. II.

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92. Abdul Aziz, The Imperial Treasury of the Indian Mughals, Reprint, Delhi, 1972.

93. J. Beames, 'On the Geography of India in the Reign of Akbar', JASB, LII, Part 1, 1884, pp.215-32.

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114. Irfan Habib, 'Currency System of the Mughal Empire', Medieval India Quarterly, IV, Nos.1-2, 1957.

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